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ARINC RESEARCH CORP ANNAPOLIS MD

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ENHANCEMENT OF COMPUTER PROGRAM EAGLE. VOLUME III. QUICK PROGRA--ETC(U)

MAY 78 P J ORTH

F33657-77-D-0029

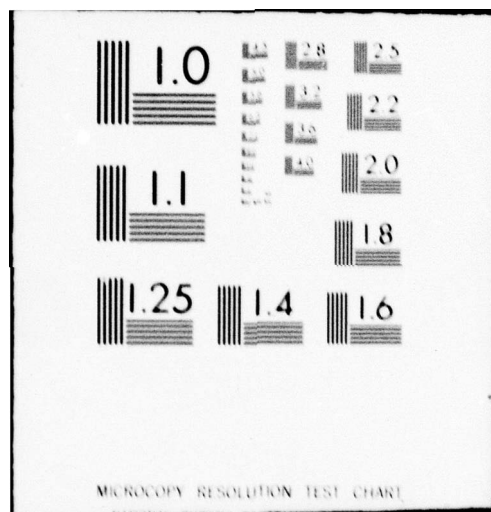
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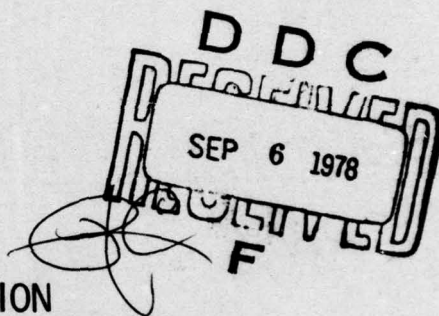
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ENHANCEMENT OF
COMPUTER PROGRAM EAGLE

Volume III: QUICK Program Listing

May 1978



Prepared for

AERONAUTICAL SYSTEMS DIVISION
Wright-Patterson Air Force Base, Ohio

Under Contract F33657-77-D-0029-0012

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6 ENHANCEMENT OF
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Prepared by

10 P.J. Orth

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ABSTRACT

A project conducted by ARINC Research Corporation to enhance the capabilities of computer program EAGLE is described. Results of the task, performed for Aeronautical Systems Division, are presented as follows: Volume I, project summary; Volume II, EAGLE program listing; and Volume III, QUICK program listing.

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FOREWORD

This ~~three-volume~~ report documents a project to enhance the capabilities of the on-line (interactive) computer program EAGLE, and the development of three new computer programs, QUICK, PURGNOW, and EST1000. These tasks were performed under Contract F33657-77-D-0029-0012 with Aeronautical Systems Division.

EAGLE was developed for ASD by ARINC Research under Contract F33657-77-D-0007, and its basic features are described in the final report under that contract.*

EAGLE enables calculation of acquisition costs for any type of system, and can readily be used to perform a broad range of other types of calculations. This report on EAGLE enhancement is divided as follows:

- Volume I - Enhancement of Computer Program EAGLE: Enhancement Summary
- Volume II - Enhancement of Computer Program EAGLE: EAGLE Program Listing
- Volume III - Enhancement of Computer Program EAGLE: QUICK Program Listing.

*ARINC Research Corporation, Computer Program EAGLE, three volumes, Publication 1977-01-1-1653, September 1977

QUICK1


```

1  *DECK EAGLE1
   OVERLAY(SAMNY,0.0)
   C
   C
   C      MAIN
5  C
   C THIS ROUTINE ENABLES THE USER TO CONTROL THE PROGRAM AND PROVIDES AN
   C INTERFACE WITH OTHER ROUTINES.
   C
   C
10  C/
   C
   C
   C      PROGRAM EAGLE1(INPUT=5138,OUTPUT=5139,TAPE5=INPUT,TAPE6=OUTPUT,
   C      *TAPE1=5139,TAPE2=5138,TAPE3=5135,TAPE4=5138,TAPE7=5138,
   C      *TAPE8=5138)
   C      DIMENSION HEADW(50,0),A(50,20),B(50,20)
   C      INTEGER PRODM(14,20)
   C      DATA IAB,77/
   C
20  C      3000 CONTINUE
   C      1000 FORMAT(* THIS IS EAGLE1. A USER'S MANUAL EXISTS. ENTER 1 TO CONT
   C      1 INUE. *)
   C
   C
25  C
   C
   C      READ*,IA
   C      IF (EOF(5)) GO TO 3000,3000
   C      3000 CONTINUE
   C      WRITE(4,*)IA
   C      IF (IA.EQ.555) WRITE(6,2000)
30  C      88 CONTINUE
   C      1002 FORMAT(* ENTER THE NUMBER OF YEARS OVER WHICH COST DATA WILL BE GE
   C      *NERATED.**)
   C      READ*,NYEARS
   C      IF (EOF(5)) GO TO 800,800
35  C      800 CONTINUE
   C      WRITE(4,*)NYEARS
   C      IF (NYEARS.GT.1000) CALL GCS(NYEARS),
   C      XRETURNS(28,400,401,402,403,404,405,406,407,408,677,4,3,410,411,
   C      *425)
   C      IF (NYEARS.EQ.555) WRITE(6,2000)
40  C      400 CONTINUE
   C      1003 FORMAT(* ENTER THE NUMBER OF COST ELEMENTS IN THE OUTPUT ARRAY.**)
   C      READ*,NRGWS
   C      IF (EOF(5)) GO TO 840,840
45  C      840 CONTINUE
   C      WRITE(4,*)NRGWS
   C      IF (NRGWS.GT.1000) CALL GCS(NRGWS),
   C      XRETURNS(88,400,401,402,403,404,405,406,407,408,677,4,3,410,411,
   C      *425)
   C      IF (NRGWS.EQ.555) WRITE(6,2000)
50  C      421 CONTINUE
   C      1050 FORMAT(* IF YOU HAVE EXISTING FILES TO INPUT TO ARRAYS ENTER 1,
   C      *OTHERWISE ENTER 2.**)
   C      READ*,IFI
   C      IF (EOF(5)) GO TO 840,840
55  C      8401 CONTINUE

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60      WRITE(4,*)IFI
      IF(IFI.GT.1000)CALL GCS(IFI),
      XRETURNS(100,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(IFI.EQ.555) WRITE(6,2000)
      I19=1
      IF(IFI.EQ.1)CALL FILES(A,HEADM,PRODM,I19)
      402 CONTINUE
      1752 FORMAT(* TO MODIFY PARTICULAR ROWS IN THE HEADING, COST OR PROD
      *UCTION SCHEDULE ARRAYS ENTER 1, OTHERWISE 2,*)
      READ*,M4
      IF(EOF(5)) 402,8402
      8402 CONTINUE
      WRITE(4,*)M4
      IF(M4.GT.1000)CALL GCS(M4),
      XRETURNS(100,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(M4.EQ.555) WRITE(6,2000)
      IF(M4.EQ.1)CALL ROWMOD(HEADM,A,PRODM,NYEARS,COST)
      413 CONTINUE
      1053 FORMAT(* TO MODIFY AN ELEMENT OF THE COST ARRAY ENTER 1, OTHERWIS
      *E 2,*)
      READ*,M6
      IF(EOF(5)) 413,8403
      8403 CONTINUE
      WRITE(4,*)M6
      IF(M6.GT.1000)CALL GCS(M6),
      XRETURNS(100,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(M6.EQ.555) WRITE(6,2000)
      IF(M6.EQ.1)CALL ELEMENT(A)
      404 CONTINUE
      1054 FORMAT(* TO INSERT A ROW IN THE HEADING AND COST ARRAYS ENTER 1, 0
      *THERWISE 2,*)
      READ*,N5
      IF(EOF(5)) 404,8404
      8404 CONTINUE
      WRITE(4,*)N5
      IF(N5.GT.1000)CALL GCS(N5),
      XRETURNS(100,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(N5.EQ.555) WRITE(6,2000)
      IF(N5.EQ.1)CALL PINSET(A,NYEARS,NROWS,HEADM,PRODM)
      405 CONTINUE
      1009 FORMAT(* TO SPECIFY OR MODIFY THE PRODUCTION SCHEDULE ENTER 1 OTHE
      *RWISE ENTER 2,*)
      READ*,I6
      IF(EOF(5)) 405,8405
      8405 CONTINUE
      WRITE(4,*)I6
      IF(I6.GT.1000)CALL GCS(I6),
      XRETURNS(100,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(I6.EQ.555) WRITE(6,2000)
      IF(I6.EQ.1)CALL PRODC(PRODM)
      406 CONTINUE
      1001 FORMAT(* TO CONSTRUCT OR MODIFY THE HEADING APPAY ENTER 1, OTHERWIS

```

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115 *SE ENTER 2**)
    READ*,IB
    IF (EOF(5)) 406,8406
    8406 CONTINUE
        WRITE(4,*)IB
        IF (IB.GT.1000) CALL GCS(IB),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF (IB.EQ.555) WRITE(6,2000)
        IF (IB.EQ.1) CALL HARCON(HEADW,NROWS)
    77 CONTINUE
    1004 FORMAT(* TO PERFORM CALCULATIONS ENTER 1, OTHERWISE ENTER 2**)
    READ*,ID
    IF (EOF(5)) 77,8077
    8077 CONTINUE
        WRITE(4,*)ID
        IF (ID.GT.1000) CALL GCS(ID),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF (ID.EQ.555) WRITE(6,2000)
        IF (ID.EQ.1) CALL CAL(A,NYEARS,NROWS,PRODM,HEADW)
    407 CONTINUE
    1306 FORMAT(* TO SPREAD THE DATA ENTER 1, OTHERWISE ENTER 2**)
    READ*,I4
    IF (EOF(5)) 407,8407
    8407 CONTINUE
        WRITE(4,*)I4
        IF (I4.GT.1000) CALL GCS(I4),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF (I4.EQ.555) WRITE(6,2000)
        IF (I4.EQ.1) CALL SPREAD(A,NYEARS,NROWS)
    409 CONTINUE
    1006 FORMAT(* TO CALCULATE THEN YEAR DOLLAR COSTS OP TO CHANGE THE BASE
    *LINE YEAR ENTER 1, OTHERWISE ENTER 2**)
    READ*,IF
    IF (EOF(5)) 408,8408
    8408 CONTINUE
        WRITE(4,*)IF
        IF (IF.GT.1000) CALL GCS(IF),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF (IF.EQ.555) WRITE(6,2000)
        IF (IF.EQ.1) CALL ESCALAT (A,B,NYEARS,NROWS)
        IF (IF.NE.1) GO TO 425
        DO 281 I=1,50
        DO 281 J=1,20
    281 A(I,J)=B(I,J)
    425 CONTINUE
    1025 FORMAT(* TO INSERT A COLUMN IN THE COST ARRAY ENTER 1, OTHERWISE 2
    ***)
    READ*,IIN
    IF (EOF(5)) 425,8025
    8025 CONTINUE
        WRITE(4,*)IIN
        IF (IIN.GT.1000) CALL GCS(IIN),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,

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*425)
IF(IIN.EQ.555) WRITE(6,2000)
IF(IIN.EQ.1)CALL CINSERT(A,NYEARS)
175 677 CONTINUE
1005 FORMAT(* TO OUTPUT THE COST DATA ENTER 1, OTHERWISE ENTER 2**)
READ*,IE
IF(EQ(5)) 677,6677
180 8677 CONTINUE
WRITE(4,*)IE
IF(IE.GT.1000)CALL GCS(IE),
XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
*425)
IF(IE.EQ.555) WRITE(6,2000)
IF(IE.EQ.1)CALL OUT(A,NYEARS,NROWS,HEADW)
185 409 CONTINUE
1054 FORMAT( * IF A PRINTOUT OF THE COST, HEADING AND/OR PRODUCTION S
*CHEDULE ARRAY IS DESIRED ENTER 1, OTHERWISE 2**)
READ*,M8
190 IF(EQ(5)) 409,8409
8409 CONTINUE
WRITE(4,*)M8
IF(M8.GT.1000)CALL GCS(M8),
XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
*425)
IF(M8.EQ.555) WRITE(6,2000)
IF(M8.EQ.1)CALL APRINT(NYEARS,NROWS,A,HEADW,PRODM)
195 410 CONTINUE
1051 FORMAT(* IF YOU WISH TO SAVE EXISTING ARRAYS ENTER 1 OTHERWISE 2**)
* )
READ*,IZI
IF(EQ(5)) 410,8410
200 8410 CONTINUE
WRITE(4,*)IZI
IF(IZI.GT.1000)CALL GCS(IZI),
XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
*425)
IF(IZI.EQ.555) WRITE(6,2000)
I19=2
IF(I19.EQ.1)CALL FILES(A,HEADW,PRODM,I19)
210 411 CONTINUE
1007 FORMAT(* ENTER 2 TO TERMINATE, 1 TO CONTINUE AND 2000 FOR AN EXPLA
*NATION OF GCS.*)
READ*,IG
215 IF(EQ(5)) 411,8411
8411 CONTINUE
WRITE(4,*)IG
IF(IG.GT.1000)CALL GCS(IG),
XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
*425)
IF(IG.EQ.555) WRITE(6,2000)
IF(IG.EQ.1)GO TO 88
IF(IG.EQ.2000)GO TO 411
220 STOP
225 C
2000 FORMAT(10X,*ROUTINE HELP NOT AVAILABLE IN EAGLE1* )
END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES
5784 EAGLE1 12

VARIABLES	SN	TYPE	RELOCATION	REFS	15	64	76	85	100	124	135	146
10516 A		REAL	ARRAY	REFS	174	185	197	210	210	DEFINED	135	146
12466 B		REAL	ARRAY	REFS	15	156	162				162	
7657 COST		* REAL		REFS	76							
7676 HEADN		REAL	ARRAY	REFS	15	64	76	100	100	124	135	146
				REFS	210							
7667		INTEGER		REFS	2*162	DEFINED	160	26				
7651 IA		INTEGER		REFS	29	30	DEFINED					
7134 IABC		* INTEGER		DEFINED	17							
7663 IB		INTEGER		REFS	119	2*128	123	124	124	DEFINED	116	
7664 ID		INTEGER		REFS	130	2*131	134	135	135	DEFINED	127	
7672 IE		INTEGER		REFS	180	2*161	134	185	185	DEFINED	177	
7666 IF		INTEGER		REFS	153	2*154	157	158	158	159		
				DEFINED	150							
7654 IFI		INTEGER		REFS	58	2*59	62	64	64	DEFINED	55	
7675 IG		INTEGER		REFS	217	2*218	221	222	222	223		
				DEFINED	214							
7671 IIN		INTEGER		REFS	169	2*170	173	174	174	DEFINED	165	
7674 IZY		INTEGER		REFS	204	2*205	208	210	210	DEFINED	201	
7655 I19		INTEGER		REFS	64	210	DEFINED	63	63	209		
7665 I4		INTEGER		REFS	141	2*142	145	146	146	DEFINED	134	
7662 I6		INTEGER		REFS	137	2*188	111	112	112	DEFINED	104	
7670 J		INTEGER		REFS	2*162	DEFINED	161					
7656 M4		INTEGER		REFS	71	2*72	75	76	76	DEFINED	69	
7660 M6		INTEGER		REFS	83	2*84	87	88	88	DEFINED	80	
7673 M8		INTEGER		REFS	192	2*193	196	197	197	DEFINED	189	
7653 MROWS		INTEGER		REFS	47	2*48	51	100	100	124	135	146
				REFS	165	197	DEFINED	44	44			
7652 MYEARS		INTEGER		REFS	37	2*36	41	76	76	130	135	146
				REFS	174	165	197	DEFINED	100	34		
7661 M5		INTEGER		REFS	95	2*96	99	100	100	DEFINED	92	
14436 PRODH		INTEGER	ARRAY	REFS	16	64	76	100	100	112	135	137
FILE NAMES	MODE	READS										
0 INPUT	FREE	116			34	44	55	68	68	80	92	104
567 OUTPUT					136	150	166	177	177	169	201	214
1356 TAPE1												
2145 TAPE2												
2734 TAPE3												
3523 TAPE4	FREE	WRITES			37	47	58	71	71	63	95	147
		119			141	153	169	180	180	192	204	217
0 TAPES												
567 TAPE6	FMT	WRITES			41	51	62	75	75	27	39	111
4312 TAPE7		123			145	157	173	184	184	196	208	221
5181 TAPE8												

04/19/76 20.00.35

STATEMENT LABELS	DEF LINE	REFERENCES
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
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93	93	93
94	94	94
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98	98	98
99	99	99
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78

107

LEOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
6220	201	• I	163 162	138	NOT INNER
6224	201	J	161 162	38	INSTACK

STATISTICS

PROGRAM LENGTH	7056E	363C
BUFFER LENGTH	5678E	3030
529008 CM USED		

6

100

```

1  *DECK CAL1
C
C/
C
C *****ARRAYS*****
C
C HEADM(59,8) PROVIDES THE HEADINGS FOR THE ROWS OF THE COST AREA
C
C A(50,20) CONTAINS THE COST DATA.
C
C B(50,20) CONTAINS THE COST INFORMATION ON THE RETURN FROM
C   EQUINE ESCALAT.
C
C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR THE EQUIPME
C
C *****ARRAYS*****
C *****VARIABLES*****
C
C IA IS AN INDEX THAT ALLOWS CONTINUED PROGRAM OPERATION.
C
C NYEARS IS THE NUMBER OF YEARS OF INTEREST.
C
C NROWS IS THE NUMBER OF ROWS OF COST DATA THAT WILL BE OUTPUT.
C
C IB IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENAB
C   SPECIFICATION OF THE HEADINGS WILL BE UTILIZED.
C
C ID IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENAB
C   CALCULATIONS TO BE MADE WILL BE UTILIZED.
C
C I4 IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENAB
C   THE SPREADING OF COST DATA WILL BE UTILIZED.
C
C IE IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENAB
C   THE OUTPUT OF COST DATA WILL BE UTILIZED.
C
C IF IS AN INDEX THAT DELINEATES WHETHER THE BASELINE COSTS WILL
C   CONVERTED TO A NEW BASELINE, OR TO THEN YEAR DOLLARS,
C   OR REMAIN UNCHANGED.
C
C I6 IS AN INDEX THAT DELINEATES WHETHER THE PRODUCTION SCHEDULE
C   WILL BE SPECIFIED OR LEFT UNCHANGED.
C
C IG IS AN INDEX THAT DELINEATES WHETHER ANOTHER CASE WILL BE GLN
C   IT ALSO DELINEATES WHETHER CERTAIN INFORMATION WILL BE UNC
C   FROM THE PREVIOUS CASE.
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C IFI DELINEATES WHETHER EXISTING FILES ARE TO BE INPUT.
C
C M4 DELINEATES WHETHER ROW MODIFICATION IS TO OCCUR.
C
C M6 DELINEATES WHETHER AN ELEMENT OF THE COST AREA IS TO BE MOD
C
C N5 DELINEATES WHETHER A ROW IS TO BE INSERTED IN THE COST OR HE

```



```
115 A=ALOG(RATE)/ALOG(2.)  
DO 10 I=1,INCRE  
IA=IX(I)+1  
IB=IX(I+1)  
IF(1B.LT.1A)GO TO 10  
DO 11 J=1A,IB  
11 COST(I)=T1*(J**A)+COST(I)  
10 CONTINUE  
RETURN  
125 C 2000 FORMAT(10X,'ROUTINE HELP NOT AVAILABLE IN EAGLE1*')  
END
```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS		DEF LINE	REFERENCES		
3 CALL		80	123		
VARIABLES	SN	TYPE	RELOCATION	REFS	
175 A	0	REAL		REFS	121
0 COST		REAL		REFS	89
172 I	0	INTEGER	F.P.	REFS	2*103
				DEFINED	102
176 IA		INTEGER		REFS	119
115 IABC	*	INTEGER		DEFINED	91
177 IB		INTEGER		REFS	119
0 INCRE		INTEGER	F.P.	REFS	116
201 IX		INTEGER		REFS	117
200 J		INTEGER	ARRAY	REFS	121
171 JJ3		INTEGER		REFS	99
226 PROD		INTEGER	ARRAY	REFS	90
0 PRODM		INTEGER	ARRAY	REFS	90
174 RATE		REAL	F.P.	REFS	109
173 T1		REAL		REFS	109
				REFS	109
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STATEMENT LABELS DEF LINE REFERENCES

0	8000	INACTIVE	96	97
0	8001	INACTIVE	108	107
22	8011		100	93
14	9000		94	97
40	9001		104	107

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES

34	131	I	102 103	38	INSTACK
52	37	I	110 111	28	INSTACK
60	211	I	113 114	38	INSTACK
72	10	* I	116 122	208	EXT REFS NOT INNER
108	11	* J	120 121	78	EXT REFS

STATISTICS

PROGRAM LENGTH	520088	CM USED	2558	173
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1  *DECK CAL3
C/
C
C *****ARRAYS*****
5  PROD(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR ALL THE EQUI
C
C COST(20) TRANSFERS THE COST INFORMATION AND
C IS ALSO USED IN MAKING THE COST CALCULATIONS.
10 PROD(20) DELINEATES THE NUMBER OF ITEMS PRODUCED
C DURING EACH TIME INCREMENT.
C
C IX(21) IS AN ARRAY WHOSE SECOND THRU 21ST ELEMENTS ARE SET EQUAL
C ELEMENTS OF PROD. IX(1) IS SET EQUAL TO ZERO AND IX IS TH
C CONVERTED INTO A CUMULATIVE ARRAY.
C *****ARRAYS*****
C *****VARIABLES*****
20 JJ3 IS AN INDEX DELINEATING THE PRODUCTION SCHEDULE TO BE USED.
C
C RATE IS THE LEARNING RATE, I.E., THE RATIO BETWEEN THE COST OF
C THE N TH AND 2N TH ITEMS.
C
C INCRE IS THE NUMBER OF INCREMENTS (USUALLY YEARS) FOR WHICH
C CALCULATIONS ARE BEING MADE.
30 Y1 IS THE COST OF THE FIRST ARTICLE PRODUCED.
C
C A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
35 C *****VARIABLES*****
C
C *****VARIABLES*****
C
C SUBROUTINE CAL3(A,COST)
C
C THIS SUBROUTINE CALCULATES A FRACTION OF AN EXISTING ROW IN THE COST
C ARRAY, A. THE USER SPECIFIES THE ROW OF A, IA, AND THE ASSOCIATED
45 C FRACTION. THE NEW COST INFORMATION IS STORED AND TRANSFERRED IN THE A
C COST.
C
C
50 C/
C
C SUBROUTINE CAL3(A,COST,NYEARS)
C DIMENSION A(50,20),COST(20)
C DATA IABC/10/
55 9000 CONTINUE
1000 FORMAT(' SPECIFY THE POW AND FRACTION.**)
READ*,IA,FRAC

```

```

60      IF(EOF(5)) 9000.0000
          0000 CONTINUE
          WRITE(4,*)IA,FRAC
          DO 10 I=1,NYEARS
            10 COST(I)=A(IA,I)*FRAC
          RETURN
        END
    
```

SYMBOLIC REFERENCE MAP (=2)

ENTRY POINTS	DEF LINE	REFERENCES			
3 CAL3	52	63			
VARIABLES	SN	TYPE	RELOCATION		
A	0	REAL	ARRAY	F.P.	
COST	52	REAL	ARRAY	F.P.	
FRAC	53	REAL			
I	53	INTEGER			
IA	51	INTEGER			
IABC	31	INTEGER			
NYEARS	0	INTEGER			

FILE NAMES
 INPUT
 TAPE4
 MODE
 FREE
 FREE
 READS
 WRITES
 57
 60

EXTERNALS
 EOF
 TYPE
 REAL
 ARGS
 1
 REFERENCES
 59

STATEMENT LABELS
 0 10
 32 1000
 9 8000
 5 9000
 DEF LINE
 52
 56
 59
 55
 REFERENCES
 61
 58
 58
 58

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES
 22 10 I 61 62 38 INSTACK

STATISTICS
 PROGRAM LENGTH 540 44
 520000 CM USED

```

1  *DECK CAL2
C
C/
C
C *****ARRAYS*****
C
C A(50,20) IS THE ARRAY CONTAINING THE COST INFORMATION.
C
C COST(20) IS USED TO STORE AND TRANSFER THE NEWLY CALCULATED COS
C INFORMATION.
C
C $$$ARRAYS*****
C
C *****VARIABLES*****
C
C NYEARS IS THE NUMBER OF YEARS OVER WHICH COST INFORMATION IS
C CALCULATED.
C
C IA IS THE ROW OF INTEREST IN ARRAY *.
C
C FRAC IS THE FRACTION OF THE ROW TO BE TAKEN.
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C *****VARIABLES*****
C
C/
C
C SUBROUTINE CAL2(COST,PRODM,INCRE)
C
C GIVEN THE COST OF THE FIRST ARTICLE, T1, A SET OF LEARNING RATES
C ,RATES, A STIPULATION OF THE NUMBER OF THE PRODUCTION
C ITEM WHEN EACH RATE BECOMES EFFECTIVE, IUNIT, THE TIME
C INTERVAL TO BE CONSIDERED, INCRE, AND THE PRODUCTION SCHEDULE,
C PRODM, THEN SUBROUTINE CAL2 CALCULATES THE COST FOR EACH YEAR
C IN BASELINE DOLLARS.
C
C THE FORMULA USED TO CALCULATE THE COST OF THE I TH ITEM IS
C
C  $T1 * (I ** (ALOG(RATE) / LOG(2)))$ 
C
C IF A NEW LEARNING RATE IS TO COMMENCE WITH THE J TH ARTICLE THEN A
C
C T1 IS CALCULATED SO THAT THE COST OF THE (J-1) TH ARTICLE WILL REM
C UNCHANGED, NAMELY,
C
C  $T1(NEW) = T1(OLD) * ((J-1) ** (OLD RATE - NEW RATE))$ 
C
C/
C
C SUBROUTINE CAL2(COST,PRODM,INCRE)

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```

60      DIMENSION COST(20),RATES(10),IUNIT(10),IX(21)
      INTEGER PRODM(10,20),PROD(20)
      DATA IACG/2/
      IF (PROD(10,20).EQ.1) JJ3=1
      IF (PROD(10,20).EQ.1) GO TO 8009
9200 CONTINUE
1005 FORMAT(* SPECIFY THE INDEX OF THE PRODUCTION SCHEDULE TO BE USED*)
      READ*,JJ3
      IF (EOF(5)) GO TO 8000
8000 CONTINUE
      WRITE(4,*) JJ3
8809 CONTINUE
      DO 213 I=1,20
213  PROD(I)=PROD(JJ3,I)
9001 CONTINUE
1000 FORMAT(* ENTER THE COST OF THE FIRST UNIT AND THE INITIAL LEARNING
      * RATE.*)
      READ*,I1,RATES(1)
      IF (EOF(5)) GO TO 8001
8001 CONTINUE
      WRITE(4,*) I1,RATES(1)
9002 CCNTINUE
1001 FORMAT(* ENTER THE NUMBER OF CHANGES THAT WILL OCCUR IN THE LEARNI
      * NG RATE.*)
      READ*,IA
      IF (EOF(5)) GO TO 8002
8002 CONTINUE
      WRITE(4,*) IA
      IF (IA.EQ.555) WRITE(6,2000)
      GO TO 143 I=1,IA
9003 CONTINUE
1003 FORMAT(* ENTER THE NEXT LEARNING RATE AND THE UNIT NUMBER AT WHICH
      * IT FIRST OCCURS.*)
      CONTINUE
1002 FORMAT(* ENTER LEARNING RATE, UNIT NUMBER*)
      READ*,RATES(I+1),IUNIT(I)
      IF (EOF(5)) GO TO 8003
8003 CONTINUE
      WRITE(4,*) RATES(I+1),IUNIT(I)
143  CONTINUE
      IX(1)=0
      DO 37 I=1,20
      IX(I+1)=IX(I)+PROD(I)
      COST(I)=0.
      KK=1
      A=ALOG(RATES(1))/ALOG(2.)
      DO 10 I=1,INCRE
      IA=IX(I)+1
      IB=IX(I+1)
      IF (IB.LT.IA) GO TO 10
      DO 11 J=IA,IB
      IF (J.EQ.IUNIT(KK)) CALL NEWRA(KK,RATES,I1,IUNIT,A)
      COST(I)=I1*(J**A)+ COST(I)
11  CONTINUE
10  CONTINUE
      RETURN
      C 2900 FORMAT(1'X','ROUTINE HELP NOT AVAILABLE IN EAGLE1' )

```

115 END

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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STATEMENT LABELS	DEF LINE	REFERENCES
141 10	111	104
0 11	110	108
0 37	101	99
0 143	97	87
0 213	71	70
175 1000	FMT NO REFS	73
216 1001	FMT NO REFS	80
253 1002	FMT NO REFS	92
241 1003	FMT NO REFS	89
156 1005	FMT NO REFS	64
271 2000	FMT	114
0 8000	INACTIVE	67
0 8001	INACTIVE	77
0 8002	INACTIVE	84

FTN 4.6+463

U-15/75 20.00.35

PAGE

74/74 OPT=1

SUBROUTINE CAL2

STATEMENT LABELS

STATEMENT LABELS	DEF LINE	REFERENCES
0 8803	95	94
22 8809	69	62
14 9000	63	66
34 9001	72	76
42 9002	79	83
55 9003	88	94

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
38 213	I	70 71	38	INSTACK
55 143	* I	87 97	238	EXT REFS
104 37	I	99 101	48	INSTACK
120 10	* I	104 111	248	EXT REFS NOT INNER
126 11	* J	100 110	138	EXT REFS

STATISTICS

PROGRAM LENGTH	4118	265
520008 CM USED		

```

1  *DECK CAL4
   C
   C/
   C
   C *****ARRAYS*****
   C
   C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR ALL EQUIPMEN
   C
   C IX(21) IS AN ARRAY WHOSE 2ND THRU 21ST ELEMENTS ARE SET EQUAL T
   C PROD. IX(1) IS SET EQUAL TO ZERO AND IX IS THEN
   C CONVERTED TO A CUMULATIVE ARRAY.
   C
   C PROCR(20) DELINEATES THE NUMBER OF ITEMS PRODUCED
   C DURING EACH TIME INCREMENT.
   C
   C COST(20) TRANSFERS THE COST INFORMATION.
   C IT IS ALSO USED IN MAKING THE COST CALCULATIONS.
   C
   C RATES(10) CONTAINS THE LEARNING RATES THAT WILL EXIST OVER THE
   C PRODUCTION LIFE.
   C
   C IUNIT(10) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
   C NEW LEARNING RATE BECOMES APPLICABLE.
   C
   C *****ARRAYS*****
   C *****VARIABLES*****
   C
   C A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
   C
   C T1 IS THE COST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A N
   C VALUE OF T1 IS CALCULATED AT EACH CHANGE IN THE LEARNING R
   C
   C KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
   C AND IUNIT.
   C
   C JJ3 DELINEATES THE PRODUCTION SCHEDULE TO BE USED.
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C *****VARIABLES*****
   C
   C/
   C SUBROUTINE CAL4(COST,NYEARS)
   C
   C THIS ROUTINE ENABLES DIRECT SPECIFICATION OF A ROW IN THE COST ARRAY.
   C
   C/
   C
   C SUBROUTINE CAL4(COST,NYEARS)
   C DIMENSION COST(20)
   C DATA IABC/11/
   C 9000 CONTINUE
   C 1002 FORMAT(* ENTER THE SET OF CONSTANTS.*)
   C READ*,(COST(I),I=1,NYEARS)
   C IF(EOF(5))9010,8000

```

```

8000 CONTINUE
WRITE(4,*) (COST(I),I=1,NYEARS)
RETURN
END
    
```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS		DEF LINE		REFERENCES	
3	CAL4	51	60		
VARIABLES		SN	TYPE	RELOCATION	
0	COST		REAL	ARRAY	F.P.
43	I		INTEGER		
25	IABC	*	INTEGER		
0	NYEARS		INTEGER		F.P.
FILE NAMES		MODE			
	INPUT		FREE	READS	56
	TAPE4		FREE	WRITES	59
EXTERNALS		TYPE	ARGS	REFERENCES	
EOF		REAL	1	57	
STATEMENT LABELS		DEF LINE	NO REFS	REFERENCES	
26	1002	FMT	55		
0	AB88	INACTIVE	5A	57	
5	9000		54	57	
STATISTICS		PROGRAM LENGTH	CM USED		
		520008	448	36	

59 DEFINED 51 56
 59 DEFINED 56 59
 59 DEFINED 51

52
 56
 53
 56

FILE NAMES
 INPUT FMT
 TAPE4 FMT

READS 36
 WRITES 37

STATEMENT LABELS
 70 25 FMT
 8 123
 45 1000 FMT NO REFS 35

DEF LINE REFERENCES
 38 36
 39 33

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES
 7 123 * I 33 39 358
 12 * J 36 36 118
 27 * J 37 37 113

EXT REFS NOT INNER
 EXT REFS
 EXT REFS

STATISTICS
 PROGRAM LENGTH 1708 64
 520008 CM USED

```

1  *DECK SPREAD
   C
   C/
   C
   C *****APRAYS*****
   C
   C HEADN(50,8) CONTAINS THE HEADINGS FOR EACH ROW IN THE COST
   C   ARRAY.
   C *****APRAYS*****
   C *****VARIABLES*****
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C/
   C
   C SUBROUTINE SPREAD(A,NYEARS,NROWS)
   C
   C THIS ROUTINE SPREADS COSTS OVER MULTIPLE YEARS. IN THE MAIN, IT RECLI
   C THE COSTS DELINEATED IN THE YEAR A PRODUCT IS RECEIVED AND SPREADS THE
   C COSTS OVER THE TIME PERIOD THEY ACTUALLY OCCURRED.
   C
   C/
   C
   C SUBROUTINE SPREAD(A,NYEARS,NROWS)
   C DIMENSION A(50,20)
   C DATA IABC/3/
   C CONTINUE
   C 4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
   C RETURN
   C END

```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 SPREAD	29	33

VARIABLES	SN	TYPE	PELOCATION	REFS
0 A	REAL	ARRAY	F.P.	23
6 IABC	INTEGER	*UNUSED	F.P.	30
0 NROWS	INTEGER	*UNUSED	F.P.	23
0 NYEARS	INTEGER	*UNUSED	F.P.	23

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	FMT NC REFS	32

STATISTICS	PROGRAM LENGTH	CM USED
74/74	178	15


```

1  *DECK CAL
   C
   C/
   C
   C *****ARRAYS*****
   C
   C AA(50) CONTAINS THE NAME OF EVERY SUBROUTINE.
   C
   C EXPL(50*8) CONTAINS A VERY BRIEF DESCRIPTION OF EVERY SUBROUTINE
10  C
   C TEXT(4) IS AN ARRAY USED TO TRANSFER 32 CHARACTERS FROM A FILE.
   C
   C TEST(1) IS USED TO CHECK FOR THE DIVIDERS BETWEEN THE
   C (SUBROUTINE DESCRIPTION/SUBROUTINE LISTING/ARRAY AND VARIA
15  C DEFINITIONS).
   C
   C IEM(5) CONTAINS RELEVANT INFORMATION IF AN ERROR OCCURS IN SYST
   C ROUTINE PFSUB.
   C
   C *****ARRAYS*****
20  C
   C *****VARIABLES*****
   C
   C IA WAS THE INTEGER FOR WHICH A VALUE WAS TO BE INPUT. 555 WAS
   C ENTERED IN LIEU OF THIS VALUE SO THAT THIS SUBROUTINE, HEL
25  C COULD BE CALLED. THE DESIRED VALUE FOR IA MUST BE INPUT
   C BEFORE LEAVING THIS ROUTINE.
   C
   C IB IS AN INDEX USED TO INDICATE THE ROUTINE FROM WHICH SUBROUTINE
30  C HELP WAS CALLED.
   C
   C IY IS THE NUMBER OF ROUTINES DESCRIBED HEREIN.
   C
   C IC IS AN INDEX DELINEATING WHETHER THE ROUTINES, TOGETHER WITH
35  C BRIEF EXPLANATION, WILL BE OUTPUT.
   C
   C SUB TAKES ON THE NAME OF A SPECIFIED ROUTINE.
   C
   C IX IS AN INDEX USED TO DETERMINE IF THE SUBROUTINE DESCRIPTION
40  C WILL BE PRINTED OUT.
   C
   C IV IS AN INDEX USED TO DETERMINE IF THE PROGRAM LISTING WILL BE
   C PRINTED OUT.
   C
   C IZ IS AN INDEX USED TO DETERMINE IF THE ARRAY AND VARIABLE DEFINI
45  C TIONS WILL BE PRINTED OUT.
   C
   C ID IS AN INDEX INDICATING WHETHER ADDITIONAL INFORMATION WILL BE
   C SOUGHT.
   C
   C IES,UCH,UN,PM,CT,M ARE VARIABLES USED IN THE CALL TO SYSTEM POU
50  C PFSUB.
   C
   C IJ DELINEATES WHETHER A RETURN IS MADE.
   C
   C *****VARIABLES*****
55  C

```

```

60 C/
61 C SUBROUTINE CAL(A,NYEARS,NROWS,PRODM,HEADW)
62 C
63 C THIS ROUTINE PROVIDES AN INTERFACE WITH THE ROUTINES THAT
64 C
65 C PERFORM CALCULATIONS. THE ROUTINE PROVIDES INITIAL PROMPTING TO THE U
66 C
67 C SO THAT DETAILED PROMPTING IS NOT REPEATED EVERY TIME A CALCULATING
68 C ROUTINE IS CALLED.
69 C/
70 C
71 C
72 C
73 C SUBROUTINE CAL(A,NYEARS,NROWS,PRODM,HEADW)
74 C DIMENSION A(50,20),COST(20),HEADW(50,8)
75 C INTEGER PRODM(10,20)
76 C DATA IABC/1/
77 C
78 C 9000 CONTINUE
79 C 1000 FORMAT(' IF AN EXPLANATION OF THIS ROUTINE IS REQUIRED ENTER 1, OT
80 C *HERMISE ENTER 2')
81 C READ*,IA
82 C IF(EOF(5)) 9000,8000
83 C
84 C 8000 CONTINUE
85 C WRITE(4,*)IA
86 C IF(IA.EQ.555) WRITE(6,2000)
87 C IF(IA.NE.1) GO TO 40
88 C
89 C CONTINUE
90 C
91 C 1001 FORMAT(' EACH COST ELEMENT (ROW) IS CALCULATED SEPARATELY. THERE A
92 C *RE 11 METHODS OF CALCULATION*,/, THESE ARE NOW DESCRIBED ALONG WI
93 C *TH THE NUMBER BY WHICH THEY CAN BE REQUESTED*,/, (1) UNIT LEARNI
94 C *NG CURVE, SINGLE LEARNING RATE*,/, (2) UNIT LEARNING CURVE, MULT
95 C *IPLE RATES*,/, (3) A FRACTION OF A PREVIOUS LINE*,/, (4) A S
96 C *ET OF CONSTANTS*,/, (5) MULTIPLE USE OF THE OTHER METHODS OF CAL
97 C *CULATION*,/, (6) THE*,1X
98 C *ROW REMAINS UNCHANGED FROM THE ROW CALCULATED IN THE PREVIOUS RUN.
99 C *,/, (7) SPECIFIED ROWS ARE SUMMED AND MULTIPLIED BY A SPECIFICEL
100 C *CONSTANT*,/, (8) QUOTIENT OF ONE ROW DIVIDED BY ANOTHER*,/, (9
101 C *) CUMULATIVE COSTS PLUS LEARNING RATE*,/, (10) 2 PRODUCTION LOTS
102 C *AND ASSOCIATED COSTS ARE SPECIFIED AND A FIRST UNIT COST*,/, 6*,
103 C *AND ASSOCIATED LEARNING RATE IS CALCULATED*,/, (11) PRODUCT OF 3
104 C *NE ROW MULTIPLIED BY ANOTHER.*
105 C DO 41 I=1,NROWS
106 C KKK=I
107 C
108 C 9001 IF(I.EQ.1)CONTINUE
109 C CONTINUE
110 C 1002 FORMAT(' ENTER THE METHOD OF CALCULATION FOR ROW 1')
111 C 1003 FORMAT(' ROW*,13.2X,8A10)
112 C READ*,IB
113 C IF(EOF(5)) 9001,8001
114 C
115 C 8001 CONTINUE
116 C WRITE(4,*)IB
117 C IF(18.EQ.555) WRITE(6,2000)
118 C IF(18.EQ.1489)CALL APRINT(NYEARS,NROWS,A,HEADW,PRODM)
119 C IF(18.EQ.1409)GO TO 9001
120 C IF(18.EQ.1)CALL CAL1(COST,PRODM,NYEARS)
121 C IF(18.EQ.2)CALL CAL2(COST,PRODM,NYEARS)

```


SUBROUTINE CAL 74/74 OPT=1

EXTERNALS TYPE ARGS REFERENCES

CAL4		2	116
CAL5		5	117
CUM		3	121
DIVIOEL		3	122
EOF		1	80
FEAL		3	167
MULT		3	123
T1SL		3	122

STATEMENT LABELS DEF LINE REFERENCES

22 40	100	84
161 41	126	100
42	123	124
217 1000	77	
242 1001	86	
370 1002	104	
376 1003	105	
413 2000	129	63
0 8000	81	80
0 8001	109	107
6 9000	76	83
25 3001	102	107

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES	EXT	REFS	NOT	INNER
23	41	I	100 126	1413					
155	42	J	124 125	38	INSTACK				

STATISTICS

PROGRAM	LENGTH	5108	326
52009	CM USED		

```

1  *DECK ESCALAT
2  C
3  C/
4  C
5  *****ARRAYS*****
6  C
7  C
8  C
9  C
10 C
11 C
12 C
13 C
14 C
15 C
16 C
17 C
18 C
19 C
20 C
21 C
22 C
23 C
24 C
25 C
26 C
27 C
28 C
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75 C
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77 C
78 C
79 C
80 C
81 C
82 C
83 C
84 C
85 C
86 C
87 C
88 C
89 C
90 C
91 C
92 C
93 C
94 C
95 C
96 C
97 C
98 C
99 C
100 C

```

A(50,20) STORES COST DATA.
 COST(20) TRANSFERS THE COST DATA OBTAINED FROM A PARTICULAR CALCULATION.
 PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES. EACH ELEMENT REPRESENTS 1 YEAR.
 HEAD(50,8) CONTAINS THE HEADING FOR EACH ROW IN THE COST ARRAY
 *****ARRAYS*****
 *****VARIABLES*****
 IA IS AN INDEX DELINEATING WHETHER AN EXPLANATION OF THE ROUTINE IS REQUIRED.
 NROWS IS THE NUMBER OF COST ELEMENTS IN THE COST ARRAY.
 NYEARS IS THE NUMBER OF YEARS OVER WHICH COSTS OCCUR.
 I9 IS AN INDEX THAT DELINEATES THE TYPE OF CALCULATION TO BE PERFORMED.
 IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
 KKK DELINEATES THE ROW OF THE COST ARRAY BEING CALCULATED.
 *****VARIABLES*****
 SUBROUTINE ESCALAT (A,B,NYEARS,NROWS)
 THIS ROUTINE RECEIVES COST DATA IN BASELINE YEAR DOLLARS AND TRANSFORMS THE DATA INTO THEN YEAR DOLLARS OR INTO DIFFERENT BASELINE DOLLARS.
 THE COMPUTATIONAL PROCEDURE IS AS FOLLOWS.-----THE ARRAY,
 A, CONTAINS THE COSTS PER SEGMENT PER YEAR IN A GIVEN YEAR DOLLARS.
 BY SPECIFYING THE APPROPRIATE INFLATION OF DEFLATION FACTORS, OR A SET OF DEFAULT VALUES, THE COSTS ARE TRANSFORMED.
 THE BASELINE YEAR DOES NOT HAVE TO BE THE YEAR CORRESPONDING TO THE FIRST ELEMENT OF THE ESCALATION ARRAY, BUT THE CORRESPONDANCE MUST BE SPECIFIED.

C/

69

SUBROUTINE ESCALAT (A,B,NYEARS,NROWS)
 DIMENSION A(50,20),B(50,20),ESC(20),ES(20)
 DATA IABC/2/
 CONTINUE

65

4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
 RETURN
 END

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES	
1 ESCALAT	68	65	
VARIABLES	SN	TYPE	RELOCATION
0 A		REAL	ARRAY F.P.
0 B		REAL	ARRAY F.P.
43 ES		REAL	*UNDEF
17 ESC		REAL	*UNDEF
6 IABC		* INTEGER	REFS
0 NROWS		INTEGER	DEFINED
0 NYEARS		INTEGER	DEFINED
			60
			60
			61
			61
			61
			61
			62
			60
			60

STATEMENT LABELS

7 4441	FMT	NO	REFS	DEF LINE	REFERENCES
				64	

STATISTICS

PROGRAM LENGTH	678	55
520008 CM USED		

```

1  *DECK NEWRA
C/
C
C *****ARRAYS*****
C
5  A(50,20) IS THE ARRAY TO BE ESCALATED.
C
C B(50,20) IS THE ARRAY AFTER ESCALATION.
C
10 ESC(20) IS THE DEFAULT ESCALATION ARRAY.
C
C ES(20) IS THE OPERATIONAL ESCALATION ARRAY.
C
15 C *****ARRAYS*****
C *****VARIABLES*****
C
C IX DETERMINES IF THE DEFAULT ESCALATION ARRAY IS TO BE DISPLAYED
C 1=DISPLAYED
C 2=NOT DISPLAYED
C
20 C
C IY DETERMINES WHETHER THE DEFAULT ESCALATION ARRAY IS TO BE
C ACCEPTED IN TOTO.
C 1=ACCEPTED.
C 2=NOT ACCEPTED IN TOTO.
C
25 C
C IZ IS THE ELEMENT OF THE DEFAULT ESCALATION ARRAY TO BE CHANGED
C
C IS THE NEW VALUE FOR THE IZ ELEMENT.
C
30 C
C IL IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C BASELINE YEAR.
C
C ID IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C FIRST YEAR OF THE ANALYSIS.
C
35 C
C KK IS AN INDEX USED IN MAKING THE ELEMENTS OF ES(I) PROPERLY
C CORRESPOND TO THOSE OF A(I,...).
C
C MOLD IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C EXISTING BASELINE YEAR.
C
40 C
C MNEW IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C NEW BASELINE YEAR.
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
45 C
C ICUM EQUALS 7 IF CUMULATIVE VALUES ARE TO BE INPUT INTO THE
C ESCALATION ARRAY.
C
50 C *****VARIABLES*****
C/
C
C ***** SUBROUTINE NEWRA(KK,RATES,I1,IUNIT,A)
C
55 C
C GIVEN THE OLD AND NEW LEARNING RATES, BOTH CONTAINED IN ARRAY RATE

```

```

C THE PRODUCTION NUMBER OF THE UNIT WITH WHICH THE CHANGE IS TO COMM
C CONTAINED IN APRAY IUNIT, AND INDEX KK, THEN THE NEW RATE IS
C KNOWN AND A NEW T1 CAN BE DETERMINED SO THAT THE COST OF THE LAST
C ARTICLE PRODUCED USING THE PREVIOUS LEARNING RATE REMAINS UNCHANGE
C THE FORMULA IS
C T1(NEW)=T1(OLD)*(PREVIOUS ARTICLE NUMBER**(OLD RATE-NEW RATE))
C/
C
SUBROUTINE NEWRA(KK,RATES,T1,IUNIT,A)
DIMENSION RATES(10),IUNIT(10)
DATA IABC/13/
B=A
N=IUNIT(KK)-1
KK=KK+1
A=ALOG(RATES(KK))/ALOG(2.)
T1=T1*(N**(-B-A))
RETURN
END

```

SYMBOLIC REFERENCE MAP (F=2)

ENTRY POINTS	DEF LINE	REFERENCES		
NEWRA	72	80		
VARIABLES	SN	TYPE	PELOCATION	REFS
A	27	REAL	F.P.	REFS
IABC	25	INTEGER	ARRAY	DEFINED
IUNIT	0	INTEGER	F.P.	REFS
KK	0	INTEGER	F.P.	REFS
N	30	INTEGER	ARRAY	REFS
RATES	0	REAL	F.P.	REFS
T1	0	REAL	F.P.	REFS
EXTERNALS	TYPE	ARGS	REFERENCES	
ALOG	REAL	1 LIBRARY	2*78	

STATISTICS
PROGRAM LENGTH 318 25
520008 CM USED


```

1  *DECK CAL5
2  C/
3  C/
4  C/
5  *****ARRAYS*****
6  C/
7  C/
8  C/
9  C/
10 C/
11 C/
12 C/
13 C/
14 C/
15 C/
16 C/
17 C/
18 C/
19 C/
20 C/
21 C/
22 C/
23 C/
24 C/
25 C/
26 C/
27 C/
28 C/
29 C/
30 C/
31 C/
32 C/
33 C/
34 C/
35 C/
36 C/
37 C/
38 C/
39 C/
40 C/
41 C/
42 C/
43 C/
44 C/
45 C/
46 C/
47 C/
48 C/
49 C/
50 C/
51 C/
52 C/
53 C/
54 C/
55 C/
56 C/
57 C/
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64 C/
65 C/
66 C/
67 C/
68 C/
69 C/
70 C/
71 C/
72 C/
73 C/
74 C/
75 C/
76 C/
77 C/
78 C/
79 C/
80 C/
81 C/
82 C/
83 C/
84 C/
85 C/
86 C/
87 C/
88 C/
89 C/
90 C/
91 C/
92 C/
93 C/
94 C/
95 C/
96 C/
97 C/
98 C/
99 C/
100 C/

```

IUNIT(10) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
 NEW LEARNING RATE BECOMES APPLICABLE
 RATES(10) CONTAINS THE LEARNING RATES WHICH WILL EXIST OVER THE
 PRODUCTION LIFE.
 *****ARRAYS*****
 *****VARIABLES*****
 KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
 AND IUNIT.
 T1 IS THE COST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A N
 VALUE OF T1 IS CALCULATED AT EACH CHANGE IN THE LEARNING R
 B IS LN(OLD LEARNING RATE)/LN(2.)
 A IS LN(NEW LEARNING RATE)/LN(2.)
 IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
 *****VARIABLES*****
 SUBROUTINE CAL5(A,COST,NYEARS,PRODM,KKK)
 IT IS NOT UNUSUAL FOR A COST ELEMENT (ROW OF THE COST ARRAY) TO BE COM
 OF THE SUM OF TWO OR MORE COSTS OBTAINED FROM SEPARATE CALCULATIONS.
 CAL5 ACCOMPLISHES THIS OVERALL CALCULATION BY STORING THE CUMULATIVE C
 IN ARRAY TCOST. THE USER SPECIFIES THE NUMBER OF SEPARATE CALCULATION
 TO BE MADE.
 SUBROUTINE CAL5(A,COST,NYEARS,PRODM,KKK)
 DIMENSION A(50,20),COST(20),TCOST(20)
 INTEGER PRODM(10,20)
 DATA IABC/12/
 DO 115 I=1,20
 TCOST(I)=0.
 9000 CONTINUE
 1000 FORMAT(* ENTER THE NUMBER OF TIMES SEPARATE CALCULATIONS WILL BE M
 ADE IN CALCULATING THIS ROW)
 READ*,IA
 IF(EOF(5)) 9000,8000
 8000 CONTINUE

PAGE 3

24/19/70 20.05.35

FTN 4.64450

74/74 OPT=1

SUBROUTINE CALS

VARIABLES SN TYPE RELOCATION

VARIABLES	SN	TYPE	RELOCATION
311 J		INTEGER	
310 JJ		INTEGER	
0 KKK		INTEGER	F.P.
0 NYEARS		INTEGER	F.P.
0 PRODH		INTEGER	F.P.
312 TCOST		FEAL	
		APRAY	

REFS	DEFINED	85
3*86	DEFINED	85
3*63	DEFINED	82
63	DEFINED	46
72	73	74
73	75	76
74	77	78
75	79	80
76	81	82
77	83	84
78	85	86
79	87	88
80	89	90
81	91	92
82	93	94
83	95	96
84	97	98
85	99	100

FILE NAMES	MODE	READS	WRITES
INPUT	FREE	55	56
TAPE4	FREE	57	58
TAPE6	FMT	59	60

EXTERNALS TYPE ARGS REFERENCES

EXTERNALS	TYPE	ARGS	REFERENCES
ADDL	3	76	
CAL1	3	72	
CAL2	3	73	
CAL3	3	74	
CAL4	2	75	
CUM	3	75	
DIVIDE1	3	77	
EOF	1	56	64
MULT	3	80	
TSL	3	79	

STATEMENT LABELS DEF LINE REFERENCES

STATEMENT LABELS	DEF LINE	REFERENCES
166 10	87	60
0 11	86	85
0 12	89	84
156 110	85	81
0 115	51	50
0 211	83	82
220 1000	53	
245 1001	62	
263 1012	70	
276 2000	92	59
0 8000	57	56
0 8001	65	64
14 9000	52	56
27 9001	61	64

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
11 115	I	50 51	29		INSTACK
27 10	* I	60 87	1428		INSTACK
151 211	JJ	82 93	39		INSTACK
162 11	J	85 96	39		INSTACK
175 12	I	86 89	28		INSTACK

STATISTICS

PROGRAM	LENGTH	CM USED
52009	3753	254

EXT REFS NOT INNER


```

1  *DECK PRODC
   C
   C/
   C
   C *****ARRAYS*****
   C
   C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
   C
   C COST(20) STORES AND TRANSFERS THE COST INFORMATION EACH TIME AN
   C   INTERFACE WITH ANOTHER ROUTINE IS MADE.
   C
   C YCOST(20) STORES THE CUMULATIVE COSTS AS THE CALCULATION IS
   C   BEING MADE.
   C
   C A(50,20) CONTAINS THE BASELINE COST INFORMATION
   C   TO BE OUTPUT.
   C
   C *****ARRAYS*****
   C
   C *****VARIABLES*****
   C
   C IA INDICATES THE NUMBER OF SEPARATE CALCULATIONS THAT WILL BE M
   C   IB IS AN INDEX USED TO DETERMINE THE SUBROUTINE TO BE CALLED.
   C   NYEARS IS THE NUMBER OF YEARS OVER WHICH THE COST CALCULATION I
   C   IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C   KKK IS THE ROW OF THE COST ARRAY BEING CALCULATED.
   C
   C *****VARIABLES*****
   C
   C/
   C
   C SUBROUTINE PRODC(PRODM)
   C
   C THIS ROUTINE IS USED TO SPECIFY THE PRODUCTION SCHEDULES, WHICH ARE ST
   C IN ARRAY PRODM. ELEMENT (10,20) OF PRODM RECORDS THE NUMBER OF SCHEDU
   C/
   C
   C SUBROUTINE PRODC(PRODM)
   C   INTEGER PRODM(10,20)
   C   DATA IABC/5/
   C   9000 CONTINUE
   C   1000 FORMAT(* SPECIFY THE NUMBER OF PRODUCTION SCHEDULES.*)
   C   READ*,IA
   C   IF (EOF(5)) 9000,8000
   C   8000 CONTINUE
   C   WRITE(4,*)IA
   C   IF (IA.EQ.555) WRITE(6,2000)
   C   PRODM(10,20)=IA
   C   DO 85 I=1,IA
   C   9001 CONTINUE
   C   1001 FORMAT(* SPECIFY THE*,13,* PRODUCTION SCHEDULE, 2, NUMBERS, WHOSE

```

SUBROUTINE PRODUC 74/74 OPT=1

```

*INDEX WILL BE*.I3)
READ*. (PROOM(I,J),JA=1,20)
IF (EOF(5)) GO TO 1,6001
0001 CONTINUE
WRITE(4,*) (PROOM(I,J),JA=1,20)
05 CONTINUE
RETURN

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES	SN	TYPE	RELOCATION	REFS	VALUE
3	44	64					
PRODUC							
VARIABLES							
141				INTEGER		53	62
140				INTEGER		52	53
140				IA		54	DEFINED
64			*	INTEGER			
142				IA		46	54
142				INTEGER		48	DEFINED
142				IA		49	54
142				INTEGER		55	DEFINED
0				PRODUM		59	62
				ARRAY		45	DEFINED
				ARRAY	F.P.	45	54

FILE NAMES	MODE		
INPUT	FREE	READS	49
TAPE4	FREE	WRITES	52
TAPE6	FMT	WRITES	53
			59
			62

EXTERNALS	TYPE	ARGS	REFERENCES
EOF	REAL	1	50
			60

STATEMENT LABELS	DEF LINE	REFERENCES
0 05	63	55
65	FMT	NC REFS
105	FMT	NC REFS
131	FMT	57
0 6000	66	53
0 8001	INACTIVE	51
6 9000	INACTIVE	50
23 9001	61	60
	47	50
	56	60

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
23	85	* I	55 63	378	EXT REFS
26		* JA	59 59	118	EXT REFS
45		* JA	62 62	118	EXT REFS

STATISTICS	PROGRAM	LENGTH	520008	CM USED	1468	102
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PAGE 1

JUL 1976 20.00.35

FTN 4.64460

SUBROUTINE OUT 74/74 OPT=1

```

1  *DECK OUT
   C
   C/
   C
   C *****ARRAYS*****
   C
   C PRODM(10,20) THIS ARRAY CONTAINS THE PRODUCTION SCHEDULES, EACH
   C   REPRESENTS 1 YEAR. ELEMENT (10,20) RECORDS THE NUMBER OF
   C *****ARRAYS*****
   C *****VARIABLES*****
   C
   C IA IS AN INDEX USED TO SPECIFY THE NUMBER OF PRODUCTION SCHEDULE
   C
   C IAED DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C *****VARIABLES*****
   C
   C SUBROUTINE OUT(A,NYEARS,NROWS,HEADW)
   C THIS ROUTINE OUTPUTS CALCULATED COSTS, BY YEAR AND TYPE. EITHER OF TH
   C FORMATS: I, E OR F, CAN BE SPECIFIED. AN APPROPRIATE TABLE HEADING CA
   C DELINEATED.
   C
   C/
   C
   C SUBROUTINE OUT(A,NYEARS,NROWS,HEADW)
   C DIMENSION A(50,21),I2Z(20),HEADW(50,6)
   C INTEGER HEADW
   C DATA IABC/5/
   C CONTINUE
   C CONTINUE
   C 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE-')
   C 47 RETURN
   C END
40

```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 OUT	32	39

VARIABLES	SN	TYPE	RELOCATION
0 A		REAL	APPAY F.P.
0 HEADW		INTEGER	APPAY F.P.
6 IABC		INTEGER	
17 IZ7		INTEGER	*UNDEF
0 NROWS		INTEGER	*UNUSED F.P.
0 NYEARS		INTEGER	*UNUSED F.P.

REFS	33	34	32
REFS	33	34	32
DEFINED	33	34	32
REFS	33	34	32
DEFINED	33	34	32

STATEMENT LABELS DEF LINE REFERENCES

0 47 INACTIVE 33
7 4441 FPI NO REFS 35

STATISTICS

PROGRAM LENGTH 410 35
520002 CM USED

```

1  *DECK FILES
   C
   C *****ARRAYS*****
   C
5  A(50,20) CONTAINS THE DATA TO BE OUTPUT.
   C
   C HEAD(50,6) CONTAINS THE HEADINGS FOR EACH ROW OF ARRAY A.
   C
10  IZZ(20) CONTAINS THE SPECIFICATION OF THE YEARS.
   C
   C *****APRAYS*****
   C
   C *****VARIABLES*****
   C
15  NYEARS IS THE NUMBER OF YEARS OF INTEREST.
   C
   C NPOMS IS THE NUMBER OF POMS IN ARRAY A WHICH CONTAIN COST
   C     INFORMATION.
   C
20  II IS A FORMAT INDEX. 1=F, 2=F, 3=I.
   C
   C IX IS A TABLE HEADING INDEX.
   C     1=BASELINE YEAR DOLLARS.
   C     2=THEN YEAR DOLLARS.
   C     3=... YEAR DOLLARS. (WHERE ... IS SPECIFIED.)
   C
25  IV IS THE VALUE OF THE YEAR INDICATED IN IX=3 ABOVE.
   C
   C IZ IS THE FIRST YEAR IN WHICH COSTS ARE INCURRED.
   C
30  IA IS A TABLE HEADING INDEX. 1=FISCAL YEARS, 2=CALENDAR YEARS.
   C
   C NX=NYEARS + 1
   C
   C N=NPOMS + 1
   C
   C INUM IS THE NUMBER OF THE DEVICE ON WHICH THE OUTPUT IS PRINTED
   C
   C IFLAG IS AN INDEX DELINEATING WHETHER THE OUTPUT IS PRINTED OVE
   C     THE TERMINAL OR PLACED ON FILE.
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C L4 DELINEATES WHETHER THE FIRST COLUMN IS TO BE TITLED "PREVIOUS
   C     COSTS".
   C
   C *****VARIABLES*****
   C
   C
50  SUBROUTINE FILES(A,HEADM,P=00M,119)
   C
   C THIS ROUTINE ENABLES DATA STORED ON FILES TO BE INPUT TO THE COST,
   C
55  C HEADING AND PRODUCTION SCHEDULE ARRAYS DURING PROGRAM OPERATION. ALSO
   C
   C INFORMATION STORED IN THESE ARRAYS CAN BE PLACED ON FILES DURING

```

```

C PROGRAM OPERATION.
C
C/
C
60
SUBROUTINE FILES(A,HEADM,PRODM,I19)
DIMENSION A(50,20),HEADM(50,2)
INTEGER PRODM(10,20),IEM(5),SUE
DATA IABC/15/
IF(I19.EQ.2)GO TO 22
9000 CONTINUE
1000 FORMAT(10)
*AND/OR PRODUCTION ARRAYS,*,/,* RESPECTIVELY, OTHERWISE ENTER 2,*,*
*A TYPICAL RESPONSE WOULD BE 1,2,1*)
READ*,IA,IB,IC
IF(IEOF(5))9000,8000
8000 CONTINUE
WRITE(4,*)IA,IB,IC
IF(IA.NE.1)GO TO 201
2 CONTINUE
1001 FORMAT(10) SPECIFY THE FILE TO BE READ INTO THE HEADING ARRAY,*)
CALL NAMCHK(SUB)
FORMAT(10,10)
CALL RETURN(5HTAPE7)
ERR=0.0
CALL PERMFILE(ERR,6HTATTACH,5HTAPE7,SUB,2HCY,1)
IF(IEPR.NE.0.0)GO TO 2
DO 41 I=1,50
READ(7,100) (HEADM(I,J),J=1,6)
100 FORMAT(10,10)
41 CONTINUE
CALL RETURN(5HTAPE7)
201 IF(IEPR.NE.1)GO TO 301
3 CONTINUE
1002 FORMAT(10) SPECIFY THE FILE TO BE READ INTO THE COST ARRAY,*)
CALL NAMCHK(SUB)
CALL RETURN(5HTAPE1)
ERR=0.0
CALL PERMFILE(ERR,6HTATTACH,5HTAPE1,SUB,2HCY,1)
IF(IEPR.NE.0.0)GO TO 3
READ(1,*) ((AI,J),I=1,50),J=1,20)
CALL RETURN(5HTAPE1)
301 IF(IEPR.NE.1)RETURN
4 CONTINUE
1003 FORMAT(10) SPECIFY THE FILE TO BE READ INTO THE PRODUCTION ARRAY,*)
CALL NAMCHK(SUB)
CALL RETURN(5HTAPE1)
ERR=0.0
CALL PERMFILE(ERR,6HTATTACH,5HTAPE1,SUB,2HCY,1)
IF(IEPR.NE.0.0)GO TO 4
READ(1,*) ((PRODM(I,J),I=1,10),J=1,2,1)
CALL RETURN(5HTAPE1)
RETURN
110
22 CONTINUE
1004 FORMAT(10) FOR THE HEADING,COST AND/OR PRODUCTION ARRAYS, RESPECTIVE
*LY,*,/,* ENTER 1 TO SAVE ON FILES, OTHERWISE ENTER 2,*,*,*
** A TYPICAL RESPONSE WOULD BE 1,2,1*)

```



```

115 READ*,JA,JB,JC
    IF (EOF(5)) 22,8022
116 CONTINUE
117 WRITE(4,*)JA,JB,JC
    IF (JA.NE.1) GO TO 202
118 CONTINUE
119 FORMAT* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
    *YOUR HEADING ARRAY,---A UNIQUE FILE NAME.*
    CALL NAMCHK(SUB)
    CALL RETURN(SHTAPE2)
    CALL REQUEST(SHTAPE2,3H*PF)
    DO 141 I=1,50
120 WRITE(6,157) (HEADM(I),J=1,8)
121 FORMAT(8A10)
122 CONTINUE
123 ENDFILE 5
    EPR=0.0
    CALL PERMFILE(ERR,7HCATALOG,SHTAPE2,SUB,2HCY,1)
    IF (ERR.NE.0) GO TO 22
    CALL RETURN(SHTAPE2)
124 IF (JB.NE.1) GO TO 302
125 CONTINUE
126 FORMAT* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
    *YOUR COST ARRAY,---A UNIQUE FILE NAME.*
    CALL NAMCHK(SUB)
    CALL RETURN(SHTAPE2)
    CALL REQUEST(SHTAPE2,3H*PF)
    WRITE(2,*) ((A(I),J=1,50),J=1,20)
    ENDFILE 2
    EPR=0.0
127 CALL PERMFILE(ERR,7HCATALOG,SHTAPE2,SUB,2HCY,1)
    IF (ERR.NE.0) GO TO 7
    CALL RETURN(SHTAPE2)
128 IF (JC.NE.1) RETURN
129 CONTINUE
130 FORMAT* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
    *YOUR PRODUCTION ARRAY,---A UNIQUE FILE NAME.*
    CALL NAMCHK(SUB)
    CALL RETURN(SHTAPE2)
    CALL REQUEST(SHTAPE2,3H*PF)
    WRITE(2,*) ((PROD(I),J=1,10),J=1,20)
    ENDFILE 2
    EPR=0.0
131 CALL PERMFILE(ERR,7HCATALOG,SHTAPE2,SUB,2HCY,1)
    IF (ERR.NE.0) GO TO 8
    CALL RETURN(SHTAPE2)
    RETURN
    END

```

SYMBOLIC REFERENCE MAP (E=2)

STATEMENT LABELS

DEF LINE	REFERENCES
70 301	90
177 302	148 135
342 1000	FMT NO REFS 69
377 1001	FMT NO REFS 78
421 1002	FMT NO REFS 92
434 1003	FMT NO REFS 102
450 1004	FMT NO REFS 112
504 1005	FMT NO REFS 121
530 1006	FMT NO REFS 137
547 1007	FMT NO REFS 150
0 8000	INACTIVE 74 73
0 9022	INACTIVE 117 116
10 9000	68 73

PROPERTIES

EXT REFS	NOT INNER
EXT REFS	NOT INNER
EXT REFS	NOT INNER
EXT REFS	NOT INNER

LOOPS LABEL	INDEX	FROM-TO	LENGTH
31 41	* I	85 28	208
34	* J	86 86	118
126 141	* I	126 129	209
131	* J	127 127	118

STATISTICS

PROGRAM LENGTH	7228	466
520003 CM USED		

1000 FORMAT(* ENTER THE NUMBER OF ROWS TO BE ADDED AND THE FRACTION BY
WHICH THE SUM OF THESE ROWS WILL BE MULTIPLIED.)

60

READ*,IA,FRAC
IF(EOF(5))9000,8000

8000 CONTINUE

WRITE(4,*)IA,FRAC

9001 CONTINUE

1001 FORMAT(* ENTER THE ROWS TO BE ADDED*)

READ*,(IARR(LX),LX=1,IA)

IF(EOF(5))9011,8001

8001 CONTINUE

WRITE(4,*)((IARR(LX),LX=1,IA)

DO 25 I=1,IA

J=IARR(I)

DO 26 L14=1,NYEARS

26 COST(L14)=COST(L14)+A(J,L14)

25 CONTINUE

DO 30 I=1,NYEARS

30 COST(I)=FRAC*COST(I)

RETURN

END

75

70

65

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 ADDL	52	77

VARIABLES	SN	TYPE	RELOCATION
0 A		REAL	APRAY F.P.
0 COST		REAL	APRAY F.P.

137 FRAC		REAL	
135 I		INTEGER	
136 IA		INTEGER	
71 IABC		INTEGER	
143 IAPR		INTEGER	
141 J		INTEGER	
140 LX		INTEGER	
142 L14		INTEGER	
0 NYEARS		INTEGER	

FILE NAMES	MODE	REFERENCES
INPUT	READS	60
TAPE4	WRITES	63

EXTERNALS	TYPE	ARGS	REFERENCES
EOF	REAL	1	61

STATEMENT LABELS	DEF LINE	REFERENCES
0 20	56	55
0 25	74	70
0 26	73	72
0 30	76	75

STATEMENT LABELS DEF LINE REFERENCES

72	1000	FMT	NC REFS	59	
120	1001	FMT	NO REFS	65	
0	8000		INACTIVE	62	61
0	8001		INACTIVE	68	67
15	9000			57	61
23	9001			64	67

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
12	20	I	55 56	28	INSTACK
41	25	* I	70 74	168	NOT INNER
50	26	L14	72 73	38	INSTACK
63	30	I	75 76	38	INSTACK

STATISTICS

PROGRAM	LENGTH	231P	153
52000B	CH USED		


```

1  *DECK DIVDEL
   C
   C/
   C
   C *****APRAYS*****
   C
   C A(50,20) CONTAINS THE COST DATA FOR THE ANALYSIS.
   C
   C COST(20) IS USED TO CALCULATE AND TRANSFER THE COST DATA FOR THE
   C   ROW BEING CALCULATED.
   C
   C IARR(50) CONTAINS THE NUMBERS OF THE ROWS TO BE ADDED.
   C
   C *****ARRAYS*****
   C
   C *****VARIABLES*****
   C
   C   YEARS IS THE NUMBER OF YEARS OF INTEREST.
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C IA IS THE NUMBER OF ROWS TO BE ADDED.
   C
   C FRAC IS THE FRACTION BY WHICH THE SUM OF THE ROWS IS TO BE MULT
   C
   C *****VARIABLES*****
   C
   C/
   C
   C   SUBROUTINE DIVDEL(A,NYEARS,COST)
   C
   C THIS ROUTINE ENABLES THE FORMULATION OF A ROW THROUGH THE DIVISION OF
   C EXISTING ROW BY A SECOND EXISTING ROW.
   C
   C/
   C
   C   SUBROUTINE DIVDEL(A,NYEARS,COST)
   C   DIMENSION A(50,20),COST(20)
   C   DATA IABC/18/
   C   9000 CONTINUE
   C   1000 FORMAT(' ENTER THE ROW OF THE NUMERATOR AND THEN THE ROW OF THE DE
   C   *NOMINATOR*')
   C   READ*,IN,IO
   C   IF (EOF(5)) 9000,0000
   C   8000 CONTINUE
   C   WRITE(4,*)IN,IO
   C   DO 12 I=1,NYEARS
   C   CONTINUE
   C   IF(A(ID,I).LE.1.E-10)COST(I)=0.
   C   IF(A(ID,I).LE.1.E-10)GO TO 12
   C   205 FORMAT(' " THE "13" ELEMENT OF ROW"13" IS ZERO."/')
   C   ** THE COST ELEMENT BEING CALCULATED WAS SET TO ZERO.**
   C   COST(I)=A(IN,I)/A(ID,I)
   C   12 CONTINUE
   C   RETURN
   C   END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES
3 DIVIDEL 38 56

VARIABLES	SN	TYPE	RELLOCATION	F.P.
0 A		REAL	ARRAY	F.P.
0 COST		REAL	ARRAY	F.P.
102 I		INTEGER		
37 IABC		INTEGER		
101 ID		INTEGER		
100 IN		INTEGER		
0 NYEARS		INTEGER		

REFS	DEF	DEF	DEF	DEF
33	51	245	DEFINED	33
39	30	50	54	
245	3454	DEFINED	44	
40				
47	51	54	DEFINED	44
47	54	44		
48	DEFINED			

FILE NAMES MODE
INPUT FREE READS 44
TAPE4 FREE WRITES 47

EXTERNALS TYPE ARGS REFERENCES
EOF PEAL 1 45

STATEMENT LABELS DEF LINE REFERENCES 51

32 12	FPT NO REFS	55	44
62 205	FPT NO REFS	52	
40 1000	FPT NO REFS	42	
7 8300	INACTIVE	46	45
5 9090		41	45

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES
24 12 I 48 55 108 OPT

STATISTICS
PROGRAM LENGTH 1038 67
520008 CM USED

04/19/70 20.00.35

FTN 4.6+46.5

SUBROUTINE ELEMENT 74/74 OPT=1

STATEMENT LABELS	DEF LINE	REFERENCES
5 99	40	44
72 1000 FMT NO REFS	41	67
117 1001 FMT NC REFS	50	
170 1002 FMT NC REFS	60	
212 1003 FMT NC REFS	70	
234 2000 FMT	78	47
0 8090 INACTIVE	56	55
0 8035 INACTIVE	73	72
0 8088 INACTIVE	64	63
0 8099 INACTIVE	45	44
21 9000	49	55
21 9000		
STATISTICS		
PROGRAM LENGTH	255B	173
52000B CM USED		

```

1  *DECK RINSERT
   C/
   C
5  *****APPLAYS*****
   C
   C A(50,20) CONTAINS THE COST INFORMATION.
   C
10 *****ARRAYS*****
   C
   C *****VARIABLES*****
   C
   C IA DELINEATES HOW THE ELEMENT WILL BE FORMED.
   C
15 INR,INC DELINEATE THE ROW AND COLUMN OF THE NUMERATOR ELEMENT
   C .RESPECTIVELY.
   C
   C IDR,IDC DELINEATE THE ROW AND COLUMN OF THE DENOMINATOR ELEMENT
   C .RESPECTIVELY.
   C
20 ICR,ICC DELINEATE THE ROW AND COLUMN OF THE ELEMENT TO BE CALCU
   C .RESPECTIVELY.
   C
   C ID DELINEATES WHETHER ANOTHER ELEMENT IS TO BE FORMED.
   C
25 X IS THE SPECIFIED VALUE OF THE ELEMENT.
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
30 *****VARIABLES*****
   C
   C/
   C
   C SUBROUTINE RINSERT(A,NYEARS,NROWS,HEADM,PRODM)
   C
35 C THIS ROUTINE ENABLES THE INSERTION OF A ROW IN THE HEADING AND COST AR
   C C INSERTION OF ROWS CAN BE REPEATED AS OFTEN AS DESIRED.
   C
   C/
   C
40 SUBROUTINE RINSERT(A,NYEARS,NROWS,HEADM,PRODM)
   C DIMENSION HEADM(50,8),A(50,20),COST(20)
   C INTEGER PRODM(10,20)
   C DATA IABC/20/
   C
45 37 CONTINUE
1000 FORMAT(* ENTER THE NUMBER OF THE TWO ROWS, SMALLEST FIRST, BETWEEN
   C * WHICH THE ROW WILL BE INSERTED.*)
   C
50 READ*,IS,IL 97,8097
   C IF(EOF(5)) 97,8097
   C 8097 CONTINUE
   C WRITE(4,*)IS,IL
   C N7=IL-IS
   C IF(N7.NE.1)GO TO 97
   C KK=NROWS+2
   C DO 30 I=IL,NROWS
   C KK=KK+1
55

```


SUBROUTINE RINSERT 74/74 OPT=1

EXTERNALS	TYPE	ARGS	REFERENCES
EOF	REAL	1	50
ROWMOD		5	69

STATEMENT LABELS	DEF LINE	REFERENCES
0 20	60	59
0 21	62	61
9 30	63	56
6 97	46	58
112 1000	47	54
136 1001	66	
162 1002	71	
206 2000	80	76
0 8000	74	73
0 8097	51	50
64 9000	70	73

77

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
23 38	* I	56 63	318	NOT INNER
34 20	J	59 60	28	INSTACK
46 21	LT	61 62	28	INSTACK

STATISTICS
PROGRAM LENGTH 520009 CM USED 2558 173

```

1      *DECK CUM
      C
      C/
      C
      C *****ARRAYS*****
      C
      C A(50,20) CONTAINS THE COST DATA.
      C
      C HEADN(50,0) CONTAINS THE COST ELEMENT HEADINGS.
      C
      C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
      C
      C COST(20) IS USED TO TRANSFER COST DATA.
      C
      C *****ARRAYS*****
      C
      C *****VARIABLES*****
      C
      C IS AND IL ARE THE 2 ROWS BETWEEN WHICH THE ROW IS BEING INSERTED
      C IS IS LESS THAN IL.
      C
      C NROWS IS THE NUMBER OF COST ELEMENTS. (ROWS)
      C
      C NYEARS IS THE NUMBER OF YEARS OF INTEREST.
      C
      C IX DELINEATES WHETHER ANOTHER ROW WILL BE INSERTED.
      C
      C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
      C
      C MZ IS USED TO GUARD AGAINST INVALID INPUT INFORMATION.
      C
      C *****VARIABLES*****
      C
      C
      C SUBROUTINE CUM(COST,PRODM,NYEARS)
      C
      C THIS ROUTINE DETERMINES FIRST UNIT COST, GIVEN THE LEARNING RATE AND T
      C
      C TOTAL COST OF SPECIFIC ITEMS.
      C
      C/
      C
      C SUBROUTINE CUM(COST,PRODM,NYEARS)
      C
      C DIMENSION COST(20)
      C
      C INTEGER PRODM(10,20)
      C
      C DATA IABC/21/
      C
      C 9000 CONTINUE
      C
      C 1000 FORMAT(' ENTER THE CUMULATIVE COST, THE FIRST AND LAST OF THE UNIT
      C *S AND THE LEARNING RATE.')
      C
      C READ*,CUMCOST,IFIRST,ISEC,RATE
      C
      C IF(EOF(5))9000,0000
      C
      C 8000 CONTINUE
      C
      C WRITE(4,*)CUMCOST,IFIRST,ISEC,RATE
      C
      C X=ALOG(RATE)/ALOG(2.)
      C
      C SUM=0.
      C
      C DO 10 I=IFIRST,ISEC
  
```


SUBROUTINE CUM 74/74 OPT=1

```

10 SUM=SUM + I**X
   T1=CUMCOST/SUM
   CONTINUE
1301 FORMAT(' THE FIRST UNIT COST IS',E15.5)
C.....
C IT IS POSSIBLE THAT T1 COULD BE USED WITH CAL2. A LATER REVISION MAY
C BE IN ORDER.
C CALL CAL1(COST,PRODM,NYEARS)
C.....
   RETURN
   END

```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES	RELOCATION
3 CUM	44	57	
VARIABLES	SN	TYPE	ARRAY F.P.
0 COST	REAL		
106 CUMCOST	REAL		
114 I	INTEGER		
47 IABC	INTEGER		
107 IFIRST	INTEGER		
110 ISEC	INTEGER		
9 NYEARS	INTEGER		
0 PRODM	INTEGER		
111 PAYE	REAL		
113 SUM	REAL		
115 T1	REAL		
112 X	REAL		
REFS			
43	DEFINED	65	
54	DEFINED	59	
58	DEFINED	57	
47	DEFINED	57	
54	DEFINED	57	
54	DEFINED	57	
65	DEFINED	57	
46	DEFINED	65	
54	DEFINED	55	
58	DEFINED	59	
59	DEFINED	59	
58	DEFINED	55	

FILE NAMES	MODE	READS	WRITES
INPUT	FREE		51
TAPE4	FREE		54

EXTERNALS	TYPE	ARGS	REFERENCES
ALOG	REAL	1 LIBRARY	255
CALL	REAL	3	65
EOF	REAL	1	52

STATEMENT LABELS	DEF LINE	REFERENCES
0 10	58	57
50 1000	FMT NC REFS	49
77 1001	FMT NC REFS	61
0 9000	INACTIVE	53
5 9000	INACTIVE	48

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES	EXT REFS
22 10	* I	57 58	68		

STATISTICS
PROGRAM LENGTH 1168
520000 CM USED 78

```

1  *DECK ROWMOD
   C
   C/
   C
   C *****ARRAYS*****
   C
   C COST(20) TRANSFERS THE CALCULATED COST INFORMATION.
   C
   C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
   C
   C *****ARRAYS*****
   C
   C *****VARIABLES*****
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C SUM IS THE CUMULATIVE COST IF THE FIRST UNIT COST WERE ONE.
   C
   C CUMCOST IS THE CUMULATIVE COST OF THE GROUP OF UNITS.
   C
   C IFIRST IS THE NUMBER OF THE FIRST PRODUCED UNIT OF THE GROUP.
   C
   C ISEC IS THE NUMBER OF THE LAST PRODUCED UNIT OF THE GROUP.
   C
   C RATE IS THE LEARNING RATE.
   C
   C T1 IS THE COST OF THE FIRST PRODUCED UNIT.
   C
   C *****VARIABLES*****
   C
   C SUBROUTINE ROWMOD(HEADM,A,PRODM,NYEARS,COST)
   C
   C THIS ROUTINE ENABLES THE MODIFICATION OF A ROW IN THE HEADING, COST OR
   C PRODUCTION SCHEDULE ARRAYS. ROW MODIFICATION CAN BE REPEATED AS OFTEN
   C AS DESIRED.
   C
   C/
   C
   C SUBROUTINE ROWMOD(HEADM,A,PRODM,NYEARS,COST)
   C
   C DIMENSION A(50,20),HEADM(50,3),COST(20)
   C INTEGER PRODM(10,20)
   C DATA IABC/17/
   C
   C 93 CONTINUE
   C 1000 FORMAT(*,10 CHANGE A ROW IN THE HEADING, COST OR PRODUCTION ARRAY,
   C * ENTER 1, 2, OR 3, RESPECTIVELY.*)
   C READ*,IA
   C IF (EOF(5)) 93,0093
   C 0093 CONTINUE
   C WRITE(4,*)IA
   C IF (IA.EQ.555) WRITE(6,2000)
   C IF (IA.EQ.2) GO TO 42
   C IF (IA.EQ.3) GO TO 43
   C 9001 CONTINUE

```

```

1001 FORMAT(* ENTER THE ROW NUMBER*)
  READ*,IB
  IF (EOF(5)) 9001,8001
60 8001 CONTINUE
  WRITE(4,*)IB
  CONTINUE
1002 FORMAT(* ENTER THE HEADING FOR ROW*,I3)
  READ 77, (HEADM(IB,JT),JT=1,8)
  WRITE(4,77) (HEADM(IB,JT),JT=1,8)
  77 FORMAT(8A10)
128 CONTINUE
70 1003 FORMAT(* TO MODIFY ANOTHER ROW ENTER 1, OTHERWISE 2*)
  READ*,ID
  IF (EOF(5)) 128,8128
  8128 CONTINUE
  WRITE(4,*)ID
  IF (ID.EQ.1) GO TO 93
  RETURN
  42 CONTINUE
1004 FORMAT(* ENTER THE ROW NUMBER*)
  READ*,IB
  IF (EOF(5)) 42,8042
80 8042 CONTINUE
  WRITE(4,*)IB
  IF (IB.EQ.555) WRITE(6,2000)
9002 CONTINUE
1005 FORMAT(* ENTER THE INDEX FOR THE METHOD OF CALCULATION.*)
  READ*,IF
  IF (EOF(5)) 9002,8002
85 8002 CONTINUE
  WRITE(4,*)IF
  IF (IF.EQ.555) WRITE(6,2000)
  IF (IF.EQ.6 OR IF.GT.11) GO TO 9002
  IF (IF.EQ.1) CALL CAL1(COST,PRODM,NYEARS)
  IF (IF.EQ.2) CALL CAL2(COST,PRODM,NYEARS)
  IF (IF.EQ.3) CALL CAL3(A,COST,NYEARS)
  IF (IF.EQ.4) CALL CAL4(COST,NYEARS)
  IF (IF.EQ.5) CALL CAL5(A,COST,NYEARS,PRODM,IE)
  IF (IF.EQ.7) CALL ACCL(A,NYEARS,COST)
  IF (IF.EQ.8) CALL DIVDEL(A,NYEARS,COST)
  IF (IF.EQ.9) CALL CUM(COST,PRODM,NYEARS)
  IF (IF.EQ.10) CALL TISL(COST,PRODM,NYEARS)
  IF (IF.EQ.11) CALL MULT(A,COST,NYEARS)
  DO 83 IK=1,NYEARS
  83 A(18,IK)=COST(IK)
  GO TO 128
  43 CONTINUE
1006 FORMAT(* ENTER THE ROW NUMBER*)
  READ*,IB
  IF (EOF(5)) 43,8043
8043 CONTINUE
  WRITE(4,*)IB
  IF (IB.EQ.555) WRITE(6,2000)
9003 CONTINUE
1007 FORMAT(* ENTER THE PRODUCTION SCHEDULE FOR ROW*,I3)
  READ*,(PHODM(IB,JX),JX=1,20)
  IF (EOF(5)) 9003,8003

```



```

115      8003 CONTINUE
        WRITE(4,*) (PROCH(I9,JX), JX=1,20)
        GO TO 128
C
2000 FORMAT(10X, *ROUTINE HELP NOT AVAILABLE IN EAGLE1*)
120      END
    
```

SYMBOLIC REFERENCE MAP (R=21)

ENTRY POINTS		DEF LINE		REFERENCES	
3 ROMMOD		43		75	
VARIABLES	SN	TYPE	RELOCATION	REFS	
0 A		REAL	ARRAY	DEFINED	
0 COST		REAL	ARRAY	REFS	102
0 HEADM		REAL	ARRAY	REFS	94
567 IA		INTEGER	ARRAY	DEFINED	95
351 IABC		* INTEGER		REFS	100
561 IB		INTEGER		REFS	43
563 ID		INTEGER		REFS	55
565 IE		* INTEGER		REFS	66
564 IF		INTEGER		REFS	53
				REFS	54
				REFS	65
				REFS	62
				REFS	113
				REFS	73
				REFS	74
				REFS	66
				REFS	54
				REFS	65
				REFS	116
				REFS	59
				REFS	76
				REFS	82
				REFS	102
				REFS	106
				REFS	94
				REFS	93
				REFS	92
				REFS	100
				REFS	98
				REFS	99
				REFS	101
				REFS	66
				REFS	113
				REFS	116
				REFS	94
				REFS	93
				REFS	100
				REFS	91
				REFS	92
				REFS	113

FILE NAMES		MODE		READS	
INPUT		MIXED		WRITES	
TAPE4		MIXED		WRITES	
TAPE6		FMT		REFERENCES	
EXTERNALS	TYPE	APGS	REFERENCES		
ADOL		3	96		
CAL1		3	91		
CAL2		3	32		
CAL3		3	93		
CAL4		2	94		
CAL5		5	95		
CUM		3	96		
DIVIDEL		3	97		
EOF	REAL	1	51		
MULT		3	100		
T1SL		3	99		


```

1  *DECK APRINT
   C
   C/
   C
   C *****ARRAYS*****
   C
   C HEADM(50,8) CONTAINS THE HEADINGS FOR THE COST ARRAY.
   C
   C A(50,20) CONTAINS THE COST DATA.
   C
   C PPODM(10,20) CONTAINS THE PRODUCTION SCHEDULE.
   C
   C COST(20) TRANSFERS THE COST INFORMATION.
   C
   C *****ARRAYS*****
   C
   C *****VARIABLES*****
   C
   C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
   C
   C IA IS AN INDEX DELINEATING THE ARRAY TO BE MODIFIED.
   C
   C IB IS THE NUMBER OF THE ROW TO BE MODIFIED.
   C
   C IO DELINEATES WHETHER ANOTHER ROW WILL BE MODIFIED.
   C
   C IF DELINEATES THE METHOD OF CALCULATION FOR A ROW IN THE COST A
   C
   C *****VARIABLES*****
   C
   C/
   C
   C SUBROUTINE APRINT(NYEARS,NROWS,A,HEADM,PRODM)
   C
   C THIS ROUTINE OUTPUTS WHAT IS PRESENTLY IN THE HEADING, COST OR PRODUCT
   C
   C SCHEDULE ARRAYS.
   C
   C/
   C
   C SUBROUTINE APRINT(NYEARS,NROWS,A,HEADM,PRODM)
   C
   C DIMENSION A(50,20),HEADM(50,8)
   C
   C INTEGER PRODM(10,20)
   C
   C DATA IABC/22/
   C
   C7 CONTINUE
   C
   C1000 FORMAT(* TO OUTPUT THE COST ARRAY ENTER 1, THE HEADING ARRAY 2, 14
   C
   C *E.,/,* PRODUCTION SCHEDULE ARRAY 3 OR IF NO ARRAY ENTER 4.*)
   C
   C READ*,IA
   C
   C IF (EOF(5)) 87,8087
   C
   C8087 CONTINUE
   C
   C WRITE(4,*)IA
   C
   C IF (IA.EQ.555) WRITE(6,2000)
   C
   C IF (IA.EQ.2160 TO 25
   C
   C IF (IA.EQ.3160 TO 35
   C
   C IF (IA.EQ.4) RETURN
   C
   C PRINT 109
   C
   C109 FORMAT("1", " THE COST ARRAY.")

```


STATEMENT LABELS DEF LINE REFERENCES

50 25	63	53	
73 35	70	54	
6 97	45	49	
156 109	57	56	
0 110	61	58	
170 111	62	59	
176 209	64	63	
0 210	68	65	
210 211	67	66	
216 309	72	71	
0 310	76	73	
232 311	75	74	
123 1000	46		
235 2000	79	52	
0 0097	51	49	

77

69

62

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
30	110	* I	59 61	208	EXT REFS NOT INNER
33		* J	59 59	119	EXT REFS
53	210	* I	65 68	208	EXT REFS NOT INNER
56		* J	66 66	119	EXT REFS
100	310	* I	73 76	208	EXT REFS NOT INNER
103		* J	74 74	119	EXT REFS

STATISTICS

PROGRAM LENGTH 2578 175

520008 CM USED

```

1  *DECK GCS
2  C
3  C
5  C *****ARRAYS*****
6  C
7  C
8  C
9  C
10 C A(50,20) CONTAINS THE COST INFORMATION.
11 C
12 C HEADM(50,8) CONTAINS THE HEADINGS FOR THE CCST ELEMENTS. (ROWS)
13 C
14 C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
15 C *****ARRAYS*****
16 C *****VARIABLES*****
17 C
18 C
19 C
20 C IA DELINEATES THE ARRAY TO BE OUTPUT.
21 C
22 C IC IS THE NUMBER OF PRODUCTION SCHEDULES.
23 C
24 C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
25 C *****VARIABLES*****
26 C
27 C
28 C
29 C
30 C SUBROUTINE GCS(N),
31 C
32 C THIS SUBROUTINE FNALES DIRECT TRANSFER FROM ANY INTEGER RESPONSE
33 C
34 C LOCATION IN THE MAIN ROUTINE TO 15 DESIGNATED LOCATIONS IN THE MAIN P
35 C
36 C
37 C
38 C
39 C
40 C SUBROUTINE GCS(N),
41 C RETURNS J1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,L16)
42 C DATA IABC/23/
43 C IF(N.EQ.1088)RETURN L1
44 C IF(N.EQ.1400)RETURN L2
45 C IF(N.EQ.1401)RETURN L3
46 C IF(N.EQ.1402)RETURN L4
47 C IF(N.EQ.1403)RETURN L5
48 C IF(N.EQ.1404)RETURN L6
49 C IF(N.EQ.1405)RETURN L7
50 C IF(N.EQ.1406)RETURN L8
51 C IF(N.EQ.1077)RETURN L9
52 C IF(N.EQ.1407)RETURN L10
53 C IF(N.EQ.1408)RETURN L11
54 C IF(N.EQ.1677)RETURN L12
55 C IF(N.EQ.1409)RETURN L13
56 C IF(N.EQ.1410)RETURN L14
57 C IF(N.EQ.1411)RETURN L15
58 C IF(N.EQ.1425)RETURN L16
59 C IF(N.EQ.2000)GOTO IC 17
60 C
61 C CONTINUE
62 C
63 C
64 C
65 C
66 C
67 C
68 C
69 C
70 C
71 C
72 C
73 C
74 C
75 C
76 C
77 C
78 C
79 C
80 C
81 C
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```

1001 FORMAT(* IF IN RESPONSE TO AN INTEGER REQUEST 1000 PLUS ONE OF CTR
*TAIN SPECIFIED STATEMENT*,/, * NUMBERS IS INPUT THEN THE USER IS SE
*NT DIRECTLY TO THAT STATEMENT NUMBER*,/, * THUS, FOR EXAMPLE, A RE
*SPONSE OF 1080 WOULD SEND THE USER TO STATEMENT 86 WHICH REQUESTS
*THE NUMBER OF YEARS OF INTEREST*,/, * THIS IS APPLICABLE FOR THE
* FOLLOWING STATEMENT NUMBERS WHOSE REQUESTS END IN THE SYMBOL #.*)

```

```

CONTINUE
STATEMENT NUMBER
REQUESTS*)

```

```

65 1010 FORMAT(* STATEMENT NUMBER
CONTINUE

```

```

1200 FORMAT(* 80 YEARS SPECIFICATION*,/,
80S SPECIFICATION*,/,

```

```

** 400 INPUT FILES*,/,
** 401 ROW MODIFICATION*,/,

```

```

** 402 ELEMENT MODIFICATION*,/,
** 403 ROW INSERTION*,/,

```

```

** 404 PRODUCTION SCHEDULE*,/,
** 405 HEADING ARRAY SPECIFICATION*,/,

```

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** 406 CALCULATIONS*,/,
** 77 SPREADING THE DATA*,/,

```

```

** 407 ALLOWING FOR INFLATION*,/,
** 408 OUTPUT*,/,

```

```

** 409 ARRAY CHECK*,/,
** 410 STORE FILES*,/,

```

```

** 411 TERMINATE*,/,
** 425 COLUMN INSERT*)

```

```

17 RETURN
END

```

80

70

75

60

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 GCS	35	83

RELOCATION

VARIABLES	SN	TYPE	DEFINED
110 IABC	*	INTEGER	37
0 L1		RETURNS	38
0 L10		RETURNS	47
0 L11		RETURNS	48
0 L12		RETURNS	49
0 L13		RETURNS	50
0 L14		RETURNS	51
0 L15		RETURNS	52
0 L16		RETURNS	53
0 L2		RETURNS	39
0 L3		RETURNS	40
0 L4		RETURNS	41
0 L5		RETURNS	42
0 L6		RETURNS	43
0 L7		RETURNS	44
0 L8		RETURNS	45
0 L9		RETURNS	46
0 N		INTEGER	45

F.P.

39

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PAGE 3

04/19/76 20.00.35

FTN 4.6+46J

74/74 OPT=1

53 54 35

VARIABLES SN TYPE RELOCATION

STATEMENT LABELS		DEF LINE		REFERENCES	
107	17	FMT	NO REFS	83	54
111	1000	FMT	NO REFS	56	
120	1001	FMT	NO REFS	54	
171	1010	FMT	NO REFS	65	
200	1200	FMT	NO REFS	67	

STATISTICS	
PROGRAM LENGTH	2608
520008 CM USED	176

```

1  *DECK INTERPR
C/
C
C *****ARRAYS*****
C
C NONE
C
C *****ARRAYS*****
C *****VARIABLES*****
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C N DELINEATES THE RETURN LOCATION IN THE MAIN ROUTINE.
C *****VARIABLES*****
C
C
C SUBROUTINE INTERPR(INUM,NX,NROWS,A,HEADW)
C THIS ROUTINE ENABLES INTEGER FORMAT OUTPUT.
C/
C
C *****ARRAYS*****
C
C A(50,20) CONTAINS THE COST INFORMATION.
C IA(50,20) CONTAINS THE COST INFORMATION, IN THOUSANDS, IN
C   INTEGER FORMAT.
C HEADW(50,6) CONTAINS THE HEADINGS FOR THE COST ELEMENTS. (ROWS)
C *****ARRAYS*****
C *****VARIABLES*****
C
C INUM DELINEATES IF THE PRINTOUT IS TO BE SENT TO A REMOTE
C   LOCATION.
C NX DELINEATES THE NUMBER OF COLUMNS TO BE OUTPUT.
C NROWS DELINEATES THE NUMBER OF ROWS TO BE OUTPUT.
C *****VARIABLES*****
C
C SUBROUTINE T1SL(COST,PROGM,NYEAFS)
C GIVEN THE COST OF TWO SPECIFIC GROUPS OF ITEMS THEN THIS ROUTINE CALCU

```


C
C THE FIRST UNIT COST AND THE LEARNING RATE.
C
C/

60

SUBROUTINE T1SL(COST,PRODM,NYEARS)
DIMENSION COST(20)
INTEGER PRODM(10,20)
DATA IABC/25/
KK=0

65

93

CONTINUE
1000 FORMAT(' ENTER THE FIRST AND LAST UNITS OF THE FIRST GROUP, THEN T
THE SECOND GROUP,,*,* FOLLOW BY THE UNIT COST AND PRODUCTION R,UMBE
R FOR THE FIRST GROUP, THEN THE SECOND.')
READ*,J1,J2,J3,J4,U1,P1,U2,P2
IF(EOF(5))93,8000

70

8000

CONTINUE
WRITE(4,*)J1,J2,J3,J4,U1,P1,U2,P2

75

S1=U1*P1
S2=U2*P2
C=S1/S2
XX=.1

80

ABC=.5
DO 100 I=1,10
X=ABC*(I-.1)*XX
E=ALOG(X)/ALOG(2.)
SUM1=0.
SUM2=0.

85

DO 110 I1=J1,J2
SUM1=SUM1+I1**E
DO 120 I1=J3,J4
SUM2=SUM2+I1**E

G=SUM1/SUM2
IF(I1.NE.1.AND.G.GT.C)I2=1
IF(I1.EQ.1.AND.G.GT.C)I2=1
IF(I1.EQ.1.AND.G.GT.C)I2=1
IF(I1.EQ.1.AND.G.LT.C)I2=2
IF(I1.EQ.1.AND.G.LT.C)I2=2
IF(I1.NE.1.AND.G.LT.C)I2=2
IF(I1.NE.1.AND.G.LT.C)I2=2
IF(I1.NE.1.AND.G.LT.C)I2=2
IF(I1.NE.1.AND.G.LT.C)I2=2

90

100

CONTINUE
XX=XX*.1
ABC=X
KK=KK+1
IF(KK.LE.4)GO TO 450
SUM=0.
E=ALOG(ABC)/ALOG(2.)
DO 515 I=J1,J2
T1=SUM+I**E

95

515

CONTINUE
T1=SUM+I**E

610

FORMAT(' ** THE VALUES FOR T1 AND SLOPE ARE*,2E15.5)
CALL CAL1(COST,PRODM,NYEARS)
RETURN
END

110

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 TISL	62	111

VARIABLES	SN	TYPE	RELOCATION
-----------	----	------	------------

265 ABC	REAL		REFS
263 C	REAL		DEFINED
0 COST	REAL	ARRAY	REFS
270 E	REAL		REFS
274 G	REAL		REFS
266 I	INTEGER		DEFINED
166 IABC	* INTEGER		106
276 IY	INTEGER		DEFINED
275 IZ	INTEGER		REFS
273 I1	INTEGER		REFS
251 J1	INTEGER		REFS
252 J2	INTEGER		REFS
253 J3	INTEGER		REFS
254 J4	INTEGER		REFS
250 KK	INTEGER		REFS
0 NYEARS	INTEGER		REFS
0 PROCH	INTEGER	ARRAY	REFS
256 P1	REAL		REFS
260 P2	REAL		REFS
277 SUM	REAL		REFS
271 SUM1	REAL		REFS
272 SUM2	REAL		REFS
261 S1	REAL		REFS
262 S2	REAL		REFS
300 T1	* REAL		REFS
255 U1	REAL		REFS
257 U2	REAL		REFS
267 X	REAL		REFS
264 XX	REAL		REFS

FILE NAMES	MODE	READS	WRITES
INPUT	FREE	71	
TAPE4	FREE		74

EXTERNALS	TYPE	ARGS	REFERENCES
ALOG	REAL	1 LIBRARY	2*92
CAL1	REAL	3	110
EOF	REAL	1	72

STATEMENT LABELS	DEF LINE	REFERENCES
------------------	----------	------------

6 93	67	72
0 100	96	80
0 110	86	85
0 120	83	87
125 250	99	97
23 450	80	102
0 515	106	105

PAGE 4

04/19/70 25.01.35

FTN 4.6460

SUBROUTINE T1SL 74/74 OPT=1

STATEMENT LABELS

DEF LINE	REFERENCES
236 610	FMT NO REFS 109
167 1000	FMT NO REFS 68
0 8000	INACTIVE 73 72

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES	EXT REFS	EXTS	NOT INNER
24 100	* I	80 38	1018		EXT REFS		
37 110	* I1	85 56	68		EXT REFS		
47 120	* I1	87 88	68		EXT REFS		
141 515	* I	105 106	68		EXT REFS		

STATISTICS

PROGRAM	LENGTH	CM USED
	3715	193

SUBROUTINE CINSRT 74/74 OPT=1

60 CONTINUE
1011 FORMAT(* THIS ROUTINE DOES NOT EXIST.*)
RETURN
END

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 CINSRT	55	60

VARIABLES	SN	TYPE	RELOCATION	REFS
0 A		REAL	ARRAY	F.P.
6 IABC	*	INTEGER		DEFINED
0 NYEARS		INTEGER	*UNUSED	F.P.
				DEFINED
				DEFINED

STATEMENT LABELS	DEF LINE	REFERENCES
7 1011	FMT	NO REFS
		59

STATISTICS
PROGRAM LENGTH 148 12
520008 CM USED

```

1  *DECK NAMCHK
C/
C
C *****ARRAYS*****
5  C A(50,20) CONTAINS THE COST DATA.
C
C B(50,21) IS USED TO FORMULATE THE NEW COST ARRAY.
C
10 C *****ARRAYS*****
C *****VARIABLES*****
C
15 C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C IA AND IB ARE THE COLUMNS BETWEEN WHICH THE NEW COLUMN WILL BE
C   INSERTED. IA IS SMALLER THAN IB AND MAY BE EQUAL TO Z
C
C IC IS USED TO CHECK FOR INPUT ERRORS.
C
20 C ID DELINEATES THE NUMBER OF NON-ZERO ELEMENTS IN THE NEW COLUMN
C
C IE DELINEATES THE ROW OF A NON-ZERO ELEMENT IN THE NEW COLUMN.
C
25 C VAL DELINEATES THE VALUE OF THAT NON-ZERO ELEMENT.
C
C NYEARS IS THE NUMBER OF YEARS OF INTEREST.
C
30 C *****VARIABLES*****
C
C/
C
C SUBROUTINE NAMCHK(SUB)
C
35 C THIS ROUTINE CHECKS THAT THE INPUT FILE NAME WILL NOT CAUSE PROGRAM
C   TERMINATION.
C
C/
40 C SUBROUTINE NAMCHK(SUB)
C   DIMENSION SNAM(9)
C   INTEGER SUB
C   DATA SYM/1H*/ ,BLANK/1H /
5   READ(5,10) SUB
10  WRITE(4,10) SUB
C   FORMAT(A10)
20  IF(SUB.NE.BLANK) GO TO 75
C   CONTINUE
25  FORMAT(* THE NAME YOU CHOOSE DID NOT MEET THE REQUIREMENTS
C   *OF LENGTH/OR TYPE OF CHARACTER,I.E. ALPHA.*)
C   GO TO 5
75  DECODE(7,100,SUB) (SNAM(I),I=2,6)
100 FORMAT(9H1)
C   SNAM(1)=SYM
C   IF(SNAM(2).LT.1H*.OR.SNAM(2).GT.1HZ) GO TO 20
C   DO 200 I=2,8
C   IF(SNAM(I).EQ.BLANK) GO TO 250

```


SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
1 MULT	40	51

VARIABLES	SN	TYPE	RELOCATION	REFS
1 A	REAL	ARRAY	F.P.	40
2 COST	REAL	ARRAY	F.P.	50
33 I	INTEGER			49
33 IA	INTEGER			40
32 IABC	INTEGER			40
34 IB	INTEGER			40
3 NYEARS	INTEGER			40

FILE NAMES	MODE	READS	WRITES
INPUT	FREE	45	
TAPE4	FREE		48

EXTERNALS	TYPE	ARGS	REFERENCES
EOF	REAL	1	46

STATEMENT LABELS	DEF LINE	REFERENCES
12	50	49
33 1000	44	
0 9000	47	46
5 9000	43	46

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
24	12	I	49 50	38	INSTACK

STATISTICS	PROGRAM LENGTH	CM USED
	568	46

LOAD MAP - EAGLE1
OVERLAY(SAMMY,0,0)

CYBER LOADER 1.3-4-6

14/19/7: 23.02.47.

PAGE 1

----- OVERLAY(SAMMY,0,0)

FMA OF THE LOAD 111
LMA+1 OF THE LOAD 42560
TRANSFER ADDRESS -- EAGLE1 6015

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSOR	VER	LEVEL	HARDWARE	COMMENTS
EAGLE1	111	14746	LGO	04/19/78	FTN		4.6 460	666X I	PROGRAM OPT=1
CAL1	15057	255	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL3	15334	54	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL2	15410	411	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL4	16321	44	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
HARCOM	16065	100	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
SPREAD	16165	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL	16204	510	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ESCALAT	16714	57	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
NEWRA	17003	31	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL5	17034	376	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
PRODUC	17432	146	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
OUT	17600	43	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
FILES	17643	722	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ADOL	20565	231	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
DIVIDEL	21016	103	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ELEMENT	21121	255	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
RINSERT	21376	255	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CUM	21653	116	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ROWMCO	21771	575	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
APRINT	22568	257	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
GCS	23045	260	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
IASL	23325	301	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CINSERT	23626	14	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
NAMCHK	23642	126	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
MULT	23770	56	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
PERMFI	24046	1054	UL-S	04/28/77	COMPASS	3.	2-414	666X I	PERMFI FUNCTION SUB-ROUTINE
RETURN	25122	70	UL-S	04/28/77	COMPASS	3.	2-414	666X I	FTN-CALLABLE FILE RETURN/UNLOAD
REQUEST	25212	472	UL-S	04/28/77	COMPASS	3.	2-414	666X I	FTN-CALLABLE EQUIPMENT REQUEST PROCESSOR
/STP.END/	25704	1							
/FGL.C./	25705	26							
/08.10./	25733	141							
DANIRV	26074	3	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FCL INITIALIZATION ROUTINE.
COMIC=	26177	64	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON CODED I/O ROUTINES AND CONSTANTS.
ENOFIL=	26163	73	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORMATTED READ FROM CODE.
TECHSK=	26256	27	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		WRITE END OF LOGICAL FILE MARK.
FLTOUF=	26305	41	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		INITIALIZE CONSTANTS.
FORSYS=	26346	311	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON FLOATING OUTPUT CODE
INPC=	26657	611	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORTRAN OBJECT LIBRARY UTILITIES.
KRAKER=	27470	302	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON INPUT FORMATTING CODE
	27772	174	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORMATTED READ FORTRAN RECORD.
	30166	406	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		PROCESS FORMATTED FORTRAN INPUT.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSR	VER	LEVEL	HARDWARE	COMMENTS
LDIN=	38574	260	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED INPUT FORMATTING
OUTCOM=	31054	154	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		COMMON OUTPUT CODE
SYS=IST	31230	63	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		MATH LIBRARY LINK TO ERROR MESSAGE PROCESSOR.
ENCODER=	31313	123	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		FORMATTED WRITE INTO CORE.
EOF	31436	16	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		TEST FOR END OF FILE STATUS.
FLTN=	31454	156	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		COMMON FLOATING INPUT CONVERTER.
FMTAP=	31632	356	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		CRACK APIST AND FORMAT FOR KODER/KRAKER.
FORTUL=	32210	46	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		FCL MISC. UTILITIES.
GETIFI=	32256	42	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LOCATE AN FIT GIVEN A FILE NAME.
INPF=	32320	203	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED INPUT CONTROL
KODER=	32523	460	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		OUTPUT FORMAT INTERPRETER.
LOOUT=	33203	241	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED OUTPUT FORMATTING
OUTC=	33444	156	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		FORMATTED WRITE FORTIRAN RECORD.
OUTF=	33622	155	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED OUTPUT CONTROL
SPA=	33777	11	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		SPA - SUBSTITUTE PARAMETER ADDRESSES.
ALOG	34010	73	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		COMPUTE COMMON AND NATURAL LOGARITHMS. OPT=ALL.
EXP	34103	75	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		EXPONENTIAL FUNCTION. L TO POWER X. OPT=ALL.
ITCX=	34200	10	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		INTEGER TO A REAL POWER.
SYS=IC=	34210	1	SL-FORTIRAN	03/06/78	COMPASS	3.	4-446		LINK BETWEEN SYS=IC AND INITIALIZATION CODE.
SYS=RM	34211	40	SL-SYSIO	03/06/78	COMPASS	3.	4-446		PROCESS SYSTEM REQUEST.
/CON.RM/	34251	6							
CIO.RM	34257	40	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/ABB.RM/	34317	18							
MOVE.RP	34327	66	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
MCT.RH	34415	233	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/JMP.RM/	34650	11							
/MEMC.RM/	34661	3							
/OPES.FO/	34664	1							
/OPEN.FO/	34665	7							
OPEN.RM	34674	236	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/TERM.RM/	35132	1							
/PUT.FO/	35133	7							
PUT.SQ	35142	147	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
WAR.SQ	36641	303	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/CLSF.FO/	37144	7							
CLSF.RH	37153	22	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/SET.RT/	37175	5							
BTRT.SQ	37202	115	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
MEQX.SQ	37317	158	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/SKFL.FO/	37467	7							
SKFL.SQ	37476	51	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
ERR.RH	37547	406	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
CHMP.SQ	40155	7	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OSUB.RM	40164	71	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OPEN.SQ	40255	305	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OPEX.SQ	40562	14	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/PUT.RT/	40576	11							
PLEQ.RP	40607	43	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
CLSF.SQ	40652	136	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/CLSV.FO/	41310	7							
CLSV.SQ	41817	137	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/REM.FC/	41156	7							
REM.SQ	41165	42	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/GET.FC/	41227	7							

LOAD MAP - EAGLE1
OVERLAY(SAMMY,0,0)

CYBER LOADER 1.3-446

04/19/78 20.02.47.

3

PAGE

/RPAR.XX/	41236	1
/GET.RT/	41237	11
GET.SQ	41250	1070 SL-SYSIO
Z.SQ	42340	03/03/78 COMPASS 3. 4-446
FSU.SQ	42450	03/03/78 COMPASS 3. 4-446
		03/03/78 COMPASS 3. 4-446

1.332 CP SECONDS

62500B CM STORAGE USED

36 TABLE MOVES

CSA NOS/BE L4540 ECS L4540-CNR1 02/16/74

20.08.28.ZABADPO FROM /AD

20.08.28.IP 3008192 WORDS - FILE INPUT , DC 04

20.08.26.ZA8,T25,IC100,CM100000. A750567,KOVACS,

20.08.28.VVPP,54211

20.08.31.REMOTE JOB - - NO CARDS WITH THIS DECK P

20.08.31.UT IN EIN-YM

20.08.31.ATTACH,GHOST1.

20.08.31.PEN IS

20.08.31.GHOST1

20.08.32.PF CYCLE NO. = 032

20.08.35.LOCKIN.

20.08.35.AFTN,I=GH0ST1,R=2.

20.02.29. 6.775 CP SECONDS COMPILATION TIME

20.02.29.ATTACH,S.NCSLIP.ID=X654321.

20.02.29.PF CYCLE NO. = 001

20.02.29.LIBRARY,S.

20.02.29.REQUEST,SAMMY,*PF.

20.02.31.MAP,PART.

20.02.31.LOAD,LGO.

20.02.32.NOGO.

20.02.47.CATALCG,SAMMY,QUICK1,RP=999.

20.02.48.INITIAL CATALOG

20.02.48.CT ID= A750567 PFN=QUICK1

20.02.48.CT CY= 001 0001728 WORDS.

20.02.48.OP 00024128 WORDS - FIL: COUTPUT , DC 40

20.02.48.MS 43008 WORDS (50176 MAX USED)

20.02.48.SCM 64008 WORDS MAXIMUM

20.02.48.CPA 8.266 SEC. 3.588 ADJ.

20.02.48.ID 58.644 SEC. 29.339 ADJ.

20.02.48.CM 1346.532 KMS. 10.774 ADJ.

20.02.48.CRUS 43.783

20.02.48.COST 2.62

20.02.48.PP 116.036 SEC. DATE 04/19/76

20.02.48.EJ END OF JOB, AD A750567.

***** ZABADPO //// END OF LIST ////

***** ZABADPO //// END OF LIST ////

QUICK2

```

1  *DECK EAGLE2
   C  OVERLAY(ELC,4,01)
   C
5  C  THIS ROUTINE ENABLES THE USER TO CONTROL THE PROGRAM AND PROVIDES AN
   C  INTERFACE WITH OTHER ROUTINES.
   C
13 C/
   C
   C  PROGRAM EAGLE2 INPUT=5135, OUTPUT=5135, TAPE2=INPUT, TAPE6=OUTPUT,
   C  *TAPE1=5135, TAPE2=5135, TAPE3=5135, TAPE4=5135, TAPE7=5135,
   C  *TAPE2=5135)
   C  DIMENSION HEAD(50,8), A(50,20), B(5,20)
   C  INTEGER PROGRAM(10,20)
   C  DATA TABC/7/
   C
15 9000 CONTINUE
   C  1000 FORMAT(* THIS IS EAGLE2. A USER'S MANUAL EXISTS. ENTER 1 TO CONT
   C  1 INQUIRE, *)
   C
21  C
   C
   C  READ*,IA
25 IF (EOF(5)) 9900,0,0,0,0
   C  8300 CONTINUE
   C  WRITE(4,*)IA
   C  IF (IA.EQ.555) WRITE(6,2000)
   C
33 30 CONTINUE
   C  1002 FORMAT(* ENTER THE NUMBER OF YEARS OVER WHICH COST DATA WILL BE GE
   C  *NERATED, *)
   C  READ*,MYEARS
   C  IF (EOF(5)) 50,60,66
   C
35 3000 CONTINUE
   C  WRITE(4,*)MYEARS
   C  IF (MYEARS.GT.1000) CALL GCS(MYEARS),
   C  XRETURN(60,40,0,0,1,402,403,404,405,406,77,407,408,677,3,410,411,
   C  *425)
   C  IF (MYEARS.EQ.555) WRITE(6,2000)
   C
40 400 CONTINUE
   C  1003 FORMAT(* ENTER THE NUMBER OF COST ELEMENTS IN THE OUTPUT ARRAY, *)
   C  READ*,NECMS
   C
45 3400 CONTINUE
   C  IF (EOF(5)) 400,0,400
   C  WRITE(4,*)NECMS
   C  IF (NECMS.GT.1000) CALL GCS(MYEARS),
   C  XRETURN(60,40,0,0,1,402,403,404,405,406,77,407,408,677,409,410,411,
   C  *425)
   C  IF (NECMS.EQ.555) WRITE(6,2000)
   C
50 401 CONTINUE
   C  1050 FORMAT(* IF YOU HAVE EXISTING FILLS TO INPUT TO ARRAYS ENTER 1,
   C  *OTHERWISE ENTER 2, *)
   C  READ*,IFI
   C  IF (EFI(5)) 401,4001
   C
55 0-01 CONTINUE
   C  WRITE(4,*)IFI
   C  IF (IFI.GT.1000) CALL GCS(IFI),

```



```

XRETURNS(00,401,402,403,404,405,406,407,408,409,410,411,
*425)
60 IF(IPI.EQ.555) WRITE(6,2000)
    I19=1
    IF(I1.EQ.1)CALL FILEIA,HEADM,PROD*1,119)
    402 CONTINUE
1052 FORMAT(* TO MODIFY PARTICULAR ROWS IN THE HEADING, COST OR PROD
    *DUCTION SCHEDULE ARRAYS ENTER 1, OTHERWISE 2,0*)
    READ*,M4
    IF(EOF(5)) 402,0402
    9402 CONTINUE
    WRITE(6,2104)
    IF(M4.GT.1000)CALL GCS(M4),
    *XRETURNS(00,401,402,403,404,405,406,407,408,409,410,411,
    *425)
    IF(M4.EQ.555) WRITE(6,2000)
    IF(M4.EQ.1)CALL ROWMOD(HEADM,A,PROD,M,NYEARS,COST)
    433 CONTINUE
1053 FORMAT(* TO MODIFY AN ELEMENT OF THE COST ARRAY ENTER 1, OTHERWI
    *SE 2,0*)
    READ*,M6
    IF(EOF(5)) 403,0403
    9403 CONTINUE
    WRITE(6,2106)
    IF(M6.GT.1000)CALL GCS(M6),
    *XRETURNS(00,401,402,403,404,405,406,407,408,409,410,411,
    *425)
    IF(M6.EQ.555) WRITE(6,2000)
    IF(M6.EQ.1)CALL ELEMENT(A)
    404 CONTINUE
1055 FORMAT(* TO INSERT A ROW IN THE HEADING AND COST ARRAYS ENTER 1, 0
    *TH, OTHERWISE 2,0*)
    READ*,N5
    IF(EOF(5)) 404,0404
    9404 CONTINUE
    WRITE(6,2105)
    IF(N5.GT.1000)CALL GCS(N5),
    *XRETURNS(00,401,402,403,404,405,406,407,408,409,410,411,
    *425)
    IF(N5.EQ.555) WRITE(6,2000)
    IF(N5.EQ.1)CALL RINSERT(A,NYEARS,NFROMS,HEADM,PROD,M)
    405 CONTINUE
1009 FORMAT(* TO SPECIFY OR MODIFY THE PRODUCTION SCHEDULE ENTER 1 CTHE
    *TH, OTHERWISE ENTER 2,0*)
    READ*,I6
    IF(EOF(5)) 405,0405
    9405 CONTINUE
    WRITE(6,2106)
    IF(I6.GT.1000)CALL GCS(I6),
    *XRETURNS(00,401,402,403,404,405,406,407,408,409,410,411,
    *425)
    IF(I6.EQ.555) WRITE(6,2000)
    IF(I6.EQ.1)CALL PRODC(PRODM)
    406 CONTINUE
1001 FORMAT(* TO CONSTRUCT OR MODIFY THE HEADING ARRAY ENTER 1, OTHERWI
    *SE ENTER 2,0*)
    READ*,I6

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115 IF(EOF(5)) 406,8-06
      8406 CONTINUE
      WRITE(4,*)118
      IF(18.GT.108)CALL GCS(118),
      XRETURNS(36,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
120 IF(18.EQ.555) WRITE(6,2000)
      IF(18.EQ.1)CALL HARGON(HEADM,NROWS)
      77 CONTINUE
      1004 FORMAT(10 PERFORM CALCULATIONS ENTER 1, OTHERWISE ENTER 2**)
      READ*,ID
      IF(EOF(5)) 77,4077
      8077 CONTINUE
      WRITE(4,*)119
      IF(10.GT.100)CALL GCS(10),
      XRETURNS(36,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(10.EQ.555) WRITE(6,2000)
      IF(10.EQ.1)CALL CAL(A,NYEAPS,NROWS,PRODM,HEADM)
      407 CONTINUE
      1008 FORMAT(10 TO SPREAD THE DATA ENTER 1, OTHERWISE ENTER 2**)
      READ*,I4
      IF(EOF(5)) 407,8407
      8407 CONTINUE
      WRITE(4,*)114
      IF(14.GT.100)CALL GCS(114),
      XRETURNS(36,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(14.EQ.555) WRITE(6,2000)
      IF(14.EQ.1)CALL SPREADIA,NYEAPS,NROWS)
      408 CONTINUE
      1308 FORMAT(10 TO CALCULATE THEN YEAR DOLLAR COSTS OR TO CHANGE THE BASE
      *LINE YEAR ENTER 1, OTHERWISE ENTER 2**)
      READ*,IF
      IF(EOF(5)) 408,8408
      8408 CONTINUE
      WRITE(4,*)115
      IF(15.GT.100)CALL GCS(115),
      XRETURNS(36,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(15.EQ.555) WRITE(6,2000)
      IF(15.EQ.1)CALL ESCALAT(A,8,NYEAPS,NROWS)
      IF(15.NE.1)GO TO 425
      DO 261 I=1,56
      DO 261 J=1,20
      281 A(I,J)=J(I,J)
      425 CONTINUE
      1025 FORMAT(10 TO INSERT A COLUMN IN THE COST AMPAY ENTER 1, OTHERWISE 2
      ***)
      READ*,IIN
      IF(EOF(5)) 425,8025
      8025 CONTINUE
      WRITE(4,*)116
      IF(16.GT.100)CALL GCS(116),
      XRETURNS(36,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
      *425)
      IF(16.EQ.555) WRITE(6,2000)

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      IF (IIN.EQ.1) CALL CINSERT(A,NYEAPS)
      172 CONTINUE
      100 FORMAT(' TO OUTPUT THE COST DATA ENTER 1, OTHERWISE ENTER 20')
      175 READ*,IE
      IF (EOF(5)) 677,6677
      18677 CONTINUE
      WRITE(*,*)IE
      IF (IE.GT.100) CALL GCS(IE),
      XRETURNS(88,408,401,402,403,404,405,406,77,407,408,677,409,410,411,
      425)
      IF (IE.EQ.555) WRITE(6,2000)
      IF (IE.EQ.1) CALL OUT(A,NYEAPS,NROWS,HEADING)
      409 CONTINUE
      1356 EORNA11 * IF A PRINTOUT OF THE COST, HEADING AND/OR EXODUCTION S
      *SCHEDULE AFFAY IS DESIRED ENTER 1, OTHERWISE 20*)
      READ*,M8
      IF (EOF(5)) 409,8409
      1405 CONTINUE
      190 WRITE(4,*)M8
      IF (M8.GT.100) CALL GCS(M8),
      XRETURNS(88,408,401,402,403,404,405,406,77,407,408,677,409,410,411,
      425)
      IF (M8.EQ.555) WRITE(6,2000)
      IF (M8.EQ.1) CALL APRINTNROWS,NROWS,HEADING,PRODM)
      410 CONTINUE
      1051 FORMAT(' IF YOU WISH TO SAVE EXISTING FRAYS ENTER 1 OTHERWISE 20')
      READ*,I2I
      IF (EOF(5)) 410,8410
      1411 CONTINUE
      WRITE(4,*)I2I
      IF (I2I.GT.100) CALL GCS(I2I),
      XRETURNS(88,408,401,402,403,404,405,406,77,407,408,677,409,410,411,
      425)
      IF (I2I.EQ.555) WRITE(6,2000)
      11982
      IF (I2I.EQ.1) CALL FILES(A,HEADING,PRODM,I19)
      411 CONTINUE
      1767 FORMAT(' ENTER 2 TO TERMINATE, 1 TO CONTINUE AND 2003 FOR AN EXPLA
      *NATION OF GCS,0')
      READ*,IG
      IF (EOF(5)) 411,8411
      9411 CONTINUE
      WRITE(4,*)IG
      IF (IG.GT.100) CALL GCS(IG),
      XRETURNS(88,408,401,402,403,404,405,406,77,407,408,677,409,410,411,
      425)
      IF (IG.EQ.555) WRITE(6,2000)
      IF (IG.EQ.1) GO TO 86
      IF (IG.EQ.2) GO TO 411
      STOP
      C
      2300 FORMAT('X,ROUTINE HELP DOES NOT EXIST IN EAGLE2')
      225 END

```


SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES	SN		TYPE	RELOCATION	VARIABLES		SN	TYPE	DEF LINE	REFERENCES	ENTRY POINTS
5664 -AGL12	12		10476	A	REAL	ARRAY	15	62	74	208	90	133	144
					REAL	ARRAY	172	183	192		DEFINED	160	
12446 B					REAL	ARRAY	15	156	160				
7637 COST					REAL	ARRAY	74						
7656 HEADM					REAL	ARRAY	15	62	74	98	122	133	163
					REAL	ARRAY	208						
7647 I					INTEGER		2*163	DEFINED	158				
7631 A					INTEGER		27	28	DEFINED	24			
7114 IABC					INTEGER		17						
7643 B					INTEGER		117	2*118	121	122	DEFINED	114	
7644 D					INTEGER		128	2*129	132	133	DEFINED	125	
7652 E					INTEGER		178	2*179	182	183	DEFINED	175	
7646 F					INTEGER		151	2*152	155	156	157		
					INTEGER		DEFINED	146					
7634 IFI					INTEGER		56	2*57	60	62	OFFINED	53	
7655 IG					INTEGER		215	2*216	219	220	221		
					INTEGER		DEFINED						
7651 IIN					INTEGER		212						
7654 IZT					INTEGER		167	2*168	171	172	DEFINED	164	
7635 IIG					INTEGER		202	2*203	206	208	DEFINED	199	
7645 I4					INTEGER		62	200	DEFINED	61	207		
7642 I6					INTEGER		139	2*140	143	144	DEFINED	136	
7650 J					INTEGER		145	2*146	149	150	DEFINED	102	
					INTEGER		2*160	DEFINED	159				
7636 M4					INTEGER		69	2*74	73	74	DEFINED	66	
7640 M6					INTEGER		81	2*82	85	86	DEFINED	79	
7653 M8					INTEGER		191	2*191	194	195	DEFINED	167	
7633 NROM3					INTEGER		45	2*46	49	98	122	133	
					INTEGER		151	195	DEFINED	42			
7632 NYEAFS					INTEGER		155	2*36	39	74	90	133	
					INTEGER		172	183	195	DEFINED	32		
7641 N5					INTEGER		93	2*94	97	98	DEFINED	90	
14416 PRODM					INTEGER	ARRAY	16	62	74	98	110	133	
					INTEGER		200						
FILE NAMES													
	INPUT	MODC	MODD	MODE	MODF	MODG	MODH	MODI	MODJ	MODK	MODL	MODM	MODN
	114	125	136	140	148	151	156	167	175	178	180	187	195
565 OUTPUT													
1352 TAPE1													
2137 TAPE2													
2724 TAPE3													
3511 TAPE4													
	WRITES	27	33	45	56	69	81	93	105	117	129	141	153
0 TAPES													
565 TAPE5													
565 TAPE6													
4276 TAPE7													
5063 TAPE8													

EXTERNALS	TYPE	ARGS	REFERENCES
APRINT	5	195	
CAL	5	113	
CINSERT	2	172	
ELEMENT	1	86	
EOF	1	25	
REAL	1	33	43
		131	149
		137	155
		126	176
ESCALAT	4	202	
FILES	4	62	
GCS	1	36	57
		140	70
		122	82
		122	191
HARCOM	2	152	175
OUT	4	143	
PRODUC	1	110	
RINSERT	5	98	
ROMHOD	5	74	
SPEED	3	144	
STATEMENT LABELS	DEF LINE	REFERENCES	
6107 77	123	36	57
		123	152
		141	168
5677 88	29	36	46
		129	57
		129	70
		140	179
0 281	160	158	155
5715 400	41	36	43
		129	141
		50	36
5733 401	50	36	46
		129	140
5755 402	63	36	46
		129	140
5777 403	75	36	46
		129	140
5821 404	87	36	46
		129	140
5843 405	99	36	46
		129	140
5865 406	111	36	46
		129	140
6131 407	134	36	46
		137	141
6153 408	145	36	46
		140	145
6257 409	184	36	46
		140	152
6301 410	196	36	46
		140	152
6324 411	209	36	46
		140	152
6213 425	161	36	46
		140	152
6235 677	173	36	46
		140	152
7115 1000	FMT NO REFS	19	
7347 1001	FMT NO REFS	112	
7137 1002	FMT NO REFS	30	
7162 1003	FMT NO REFS	41	
7372 1004	FMT NO REFS	124	

STATEMENT LABELS

STATEMENT LABELS	DEF LINE	REFERENCES
7504 1005 FMT NO REFS	174	
7434 1016 FMT NO REFS	146	
7576 1017 FMT NO REFS	210	
7413 1006 FMT NO REFS	135	
7324 1009 FMT NO REFS	108	
7462 1025 FMT NO REFS	162	
7204 1050 FMT NO REFS	51	
7554 1051 FMT NO REFS	197	
7230 1052 FMT NO REFS	64	
7257 1053 FMT NO REFS	75	
7525 1054 FMT NO REFS	125	
7361 1055 FMT NO REFS	68	
7621 2000 FMT	224	
0 8000 INACTIVE	25	
0 8025 INACTIVE	165	
0 8077 INACTIVE	127	
0 8088 INACTIVE	34	
0 8400 INACTIVE	44	
0 8411 INACTIVE	55	
0 8402 INACTIVE	68	
0 8413 INACTIVE	66	
0 8404 INACTIVE	92	
0 8405 INACTIVE	104	
0 8406 INACTIVE	116	
0 8417 INACTIVE	137	
0 8408 INACTIVE	150	
0 8409 INACTIVE	159	
0 8410 INACTIVE	201	
0 8411 INACTIVE	214	
0 8677 INACTIVE	177	
5665 9020	13	

121

109

206

85

194

73

182

60

171

49

155

39

143

24

132

26

166

127

126

33

33

43

43

54

67

79

91

103

115

149

149

182

200

213

176

25

25

2 07

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES	NOT INNER
6200 281	* I	158 160	138		
6204 281	J	159 160	39	INSLACK	

STATISTICS

PROGRAM LENGTH	70568	3630
BUFFER LENGTH	56523	2584
520003 CM USED		

1 *DECK CAL1

C

5 C *****ARRAYS*****

C

C HEADM(50,4) PROVIDES THE HEADINGS FOR THE ROWS OF THE COST ARRAY

C

C A(50,20) CONTAINS THE COST DATA.

C

C B(50,20) CONTAINS THE COST INFORMATION ON THE RETURN FROM
ROUTINE ESCALAT.

C

C PRODM(1,20) CONTAINS THE PRODUCTION SCHEDULES FOR THE EQUIPMENT

C

15 C *****ARRAYS*****

C

C *****VARIABLES*****

C

C IA IS AN INDEX THAT ALLOWS CONTINUED PROGRAM OPERATION.

C

C NYEARS IS THE NUMBER OF YEARS OF INTEREST.

C

C NEOMS IS THE NUMBER OF ROWS OF COST DATA THAT WILL BE OUTPUT.

C

C IB IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
SPECIFICATION OF THE HEADINGS WILL BE UTILIZED.

C

C IO IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
CALCULATIONS TO BE MADE WILL BE UTILIZED.

C

C IA IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
THE SPREADING OF COST DATA WILL BE UTILIZED.

C

C IE IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
THE OUTPUT OF COST DATA WILL BE UTILIZED.

C

C IF IS AN INDEX THAT DELINEATES WHETHER THE BASELINE COSTS WILL
CONVERTED TO A NEW BASELINE, OR TO THEN YEAR DOLLARS,
OR REMAIN UNCHANGED.

C

C IF IS AN INDEX THAT DELINEATES WHETHER THE PRODUCTION SCHEDULE
WILL BE SPECIFIED OR LEFT UNCHANGED.

C

C IG IS AN INDEX THAT DELINEATES WHETHER ANOTHER CASE WILL BE GEN
IT ALSO DELINEATES WHETHER CERTAIN INFORMATION WILL BE UNC
FROM THE PREVIOUS CASE.

C

C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.

C

C IFI DELINEATES WHETHER EXISTING FILES ARE TO BE INPUT.

C

C M4 DELINEATES WHETHER ROW MODIFICATION IS TO OCCUR.

C

C M6 DELINEATES WHETHER AN ELEMENT OF THE COST ARRAY IS TO BE MOD

C

C M5 DELINEATES WHETHER A ROW IS TO BE INSERTED IN THE COST OR HE

C

AD-A058 352

ARINC RESEARCH CORP ANNAPOLIS MD

F/G 9/2

ENHANCEMENT OF COMPUTER PROGRAM EAGLE. VOLUME III. QUICK PROGRA--ETC(U)

MAY 78 P J ORTH

F33657-77-D-0029

UNCLASSIFIED

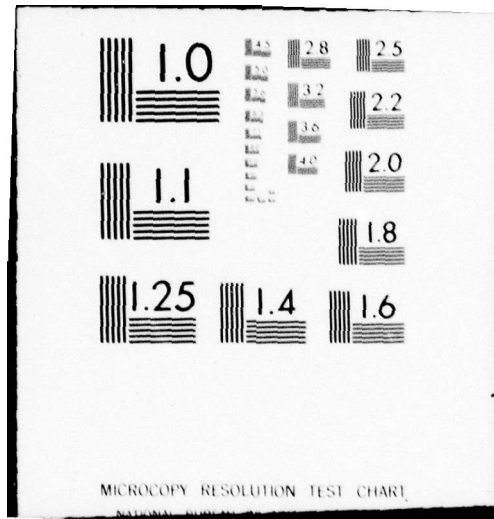
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ARRAYS.

IN DELINEATES WHETHER A COLUMN IS TO BE INSERTED IN THE COST A
M8 DELINEATES WHETHER AN ARRAY IS TO BE OUTPUT.

MS DELINEATES WHETHER AN ARRAY IS TO BE OUTPUT.

IZT DELINEATES WHETHER AN ARRAY IS TO BE PLACED ON FILE.

VARIABLES

51

SUBROUTINE CAL1(COST,PRODM,ILINK)

THE COST OF THE FIRST AFFILIATE, T1, THE LEARNING RATE, RATE, A

ION SCHEDULE, PRCD, AND THE NUMBER OF TIME INCREMENTS TO BE CON

THEN THE SUPROUTINE CAL1 CALCULATES THE COST OF THE ITEMS IN

N FOR EACH TIME INCREMENT IN BASELINE DOLLARS AND STORES THE

TION IN THE ARRAY TITLED COST.

MULA USED TO CALCULATE THE COST OF THE ITH ITEM IS

$$T1 \leftarrow (I \leftarrow (\text{ALOG}(\text{RATE}) / \text{ALOG}(2)))$$

13

SUBROUTINE CAL1(COST,PRODM,INCR)

DIMENSION CJCT(26), JX(21)

INTEGER PRGDM(10,20),PROG(20)

DATA IAPC/41
CONTYING

CONTINUE
EOLM: 18

* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*

RETURN

DECK GAL 3

ENC

SYMBOLIC REFERENCE MAP ($n=2$)

ENTRY POINTS	OFF LINE	REFERENCES
3 CAL1	84	94

STATEMENT LABELS DEF LINE REFERENCES

7 4401 FMT NO REFS 93

STATISTICS

PGOGEAR LENGTH

520003 CM USED

736 56

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2 11

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*****ARRAYS*****
 PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR ALL THE EQUI
 COST(20) TRANSFERS THE COST INFORMATION AND
 IS ALSO USED IN MAKING THE COST CALCULATIONS.
 PROLC(20) DELINEATES THE NUMBER OF ITEMS PRODUCED
 DURING EACH TIME INCREMENT.
 IX(21) IS AN ARRAY WHICH SECOND THRU 21ST ELEMENTS ARE SET EQUAL
 ELEMENTS OF PRODM. IX(1) IS SET EQUAL TO ZERO AND IX IS IN
 CONVERTED INTO A CUMULATIVE ARRAY.
 *****ARRAYS*****
 *****VARIABLES*****
 J33 IS AN INDEX DELINEATING THE PRODUCTION SCHEDULE TO BE USED.
 RATE IS THE LEARNING RATE, I.E., THE RATIO BETWEEN THE COST OF
 THE N TH AND 2N TH ITEMS.
 INCR IS THE NUMBER OF INCREMENTS (USUALLY YEARS) FOR WHICH
 CALCULATIONS ARE BEING MADE.
 T1 IS THE COST OF THE FIRST ARTICLE PRODUCED.
 A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
 IAPC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
 *****VARIABLES*****
 SUBROUTINE CAL3(COST)
 THIS SUBROUTINE CALCULATES A FRACTION OF AN EXISTING ROW IN THE COST
 ARRAY, A. THE USER SPECIFIES THE ROW OF A, IA, AND THE ASSOCIATED
 FRACTION. THE NEW COST INFORMATION IS STORED AND TRANSFERRED IN THE
 COST.
 SUBROUTINE CAL3(COST,NYEARS)
 DIMENSION A(56,23),COST(26)
 DATA IABC/10/
 CONTINUE
 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.')
 RETURN
 *DECK CAL2

END

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	OFF LINE	REFERENCES
3 CAL3	51	56

VARIABLES SN TYPE LOCATION

2 A	REAL	A,RAY	F,P.	52	DEFINCD	51
3 COST	REAL	A,RAY	F,P.	52	DEFINCD	51
6 IABC	INTEGER			53		
8 MYEARS	INTEGER	UNJ,EG	F,P.	51	DEFINCD	51

STATEMENT LABELS DEF LINE REFERENCES

7 4441	FMT NO REFS	55
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STATISTICS

PROGRAM LENGTH	178	15
52000 CM USED		

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*****APPLYS*****

A(30,20) IS THE ARRAY CONTAINING THE COST INFORMATION.

COST(20) IS USED TO STORE AND TRANSFER THE NEWLY CALCULATED COST INFORMATION.

5.88.88 ARRAYS*****

*****VARIABLES*****

MYEARS IS THE NUMBER OF YEARS OVER WHICH COST INFORMATION IS CALCULATED.

IA IS THE ROW OF INTEREST IN ARRAY A.

FRAC IS THE FRACTION OF THE ROW TO BE TAKEN.

IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.

*****VARIABLES*****

SUBROUTINE CAL2(COST,PROD,INCR)

GIVEN THE COST OF THE FIRST ARTICLE, I.A. A SET OF LEARNING RATES, RATES, A STIPULATION OF THE NUMBER OF THE PRODUCTION ITEM WHEN EACH RATE BECOMES EFFECTIVE, IUNIT, THE TIME INTERVAL TO BE CONSIDERED, INCR, AND THE PRODUCTION SCHEDULE, PROD, THEN SUBROUTINE CAL2 CALCULATES THE COST FOR EACH YEAR IN BASELINE DOLLARS.

THE FORMULA USED TO CALCULATE THE COST OF THE J TH ITEM IS

$$T1 * (1 + ((ALOG(INCR(1)) / ALOG(2))))$$

IF A NEW LEARNING RATE IS TO COMMENCE WITH THE J TH ARTICLE THEN T1 IS CALCULATED SO THAT THE COST OF THE (J-1) TH ARTICLE WILL REMAIN UNCHANGED, NAMELY,

$$T1(NEW) = T1(OLD) * ((J-1) * (OLD RATE - NEW RATE))$$

SUBROUTINE CAL2(COST,PROD,INCR)

DIMENSION COST(20), RATES(10), IUNIT(10), T1(21)

INTEGER PRODM(10,20),PROD(20)
DATA TABC/2/

CONTINUE

4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF LAGLE.')

*DECK CAL4

RETURN

END

SYMBOLIC REFERENCE MAP (K=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 CAL2	56	62

VARIABLES	SM TYP	RELOCATION
0 COST	REAL	ARRAY F.P.
5 TABC	INTEGER	ARRAY F.P.
8 INCR	INTEGER	*UNUSED F.P.
34 JUNIT	INTEGER	*UNDEF F.P.
43 IX	INTEGER	*UNDEF F.P.
70 PROD	INTEGER	*UNDEF F.P.
8 PRODM	INTEGER	ARRAY F.P.
17 RATES	REAL	*UNDEF F.P.

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	61	

STATISTICS	PROGRAM LENGTH	1148	76
520008 CM USED			


```

1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C
6      C PEODM(17,20) CONTAINS THE PRODUCTION SCHEDULES FOR ALL EQUIPME
7      C
8      C IX(21) IS AN ARRAY WHOSE 2ND THRU 21ST ELEMENTS ARE SET EQUAL T
9      C PROD. IX(1) IS SET EQUAL TO ZERO AND IX IS THEN
10     C CONVERTED TO A CUMULATIVE ARRAY.
11     C
12     C PEOD(20) DELINEATES THE NUMBER OF ITEMS PRODUCED
13     C DURING EACH TIME INCREMENT.
14     C
15     C COST(20) TRANSFERS THE COST INFORMATION.
16     C IT IS ALSO USED IN MAKING THE COST CALCULATIONS.
17     C
18     C RATES(10) CONTAINS THE LEARNING RATES THAT WILL EXIST OVER THE
19     C PRODUCTION LIFE.
20     C
21     C IUNIT(10) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
22     C NEW LEARNING RATE BECOMES APPLICABLE.
23     C *****ARRAYS*****
24     C *****VARIABLES*****
25     C
26     C A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
27     C
28     C Y1 IS THE COST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A N
29     C VALUE OF Y1 IS CALCULATED AT EACH CHANGE IN THE LEARNING P
30     C
31     C KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
32     C AND IUNIT.
33     C
34     C J13 DELINEATES THE PRODUCTION SCHEDULE TO BE USED.
35     C
36     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
37     C *****VARIABLES*****
38     C
39     C SUBROUTINE CALL(COST,NYEARS)
40     C
41     C THIS ROUTINE ENABLES DIRECT SPECIFICATION OF A ROW IN THE COST ARRAY.
42     C *****VARIABLES*****
43     C
44     C SUBROUTINE CALL(COST,NYEARS)
45     C DIMENSION COST(20)
46     C DATA IABC/11/
47     C CONTINUE
48     C
49     C 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF LAGL...')
50     C RETURN
51     C *DECK MARGON
52     C END

```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 CALA	50	55

VARIABLES	SN	TYPE	RELOCATION
0 COST	REAL	ARRAY	F.P.

	REFS	DEFINED	50
5 IASC	DEFINED	51	52
6 MYEARS	INTEGER	UNUSED	F.P.
	DEFINED	50	

STATEMENT LABELS	DEF LINE	REFERENCES
7 AAA1	54	

STATISTICS	PROGRAM LENGTH	176	15
	52888	CM	USED

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986    C
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994    C
995    C
996    C
997    C
998    C
999    C
1000   C

```

2 17

SYMBOLIC REFERENCE MAP (15=21)

ENTRY POINTS DEF LINE REFERENCES

3 HARC0N 25 36

VARIABLES SN TYPE PELOCATION

4 HEADN REAL ARRAY F.P.

101 I INTEGER

53 IABC * INTEGER

102 J INTEGER

8 NROWS F.P.

34

26

31

34

35

35

35

35

35

35

29

34

30

34

31

REFS

REFS

DEFIN

REFS

REFS

25

36

35

35

35

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35

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35

35

0-720778 08.58.30

FTN #6446

SUBROUTINE MARCON 7/4/76 OPI=1

FILE NAMES	MODE	HEADS	34
INPUT	FMT	WRITES	35
TAPE4	FMT		

STATEMENT LABELS	DEF LINE	REFERENCES	35
77 25	36	34	
8 123	37	31	
54 1000	FMT NO REFS	33	

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
16	123	* I	31 32	358	EXT REFS NOT INNER
21		* J	34 34	118	EXT REFS
36		* J	35 35	118	EXT REFS

STATISTICS

PROGRAM LENGTH	1198	72
52008 CH USED		

```

1      C
2      C/
3      C *****ARRAYS*****
4      C
5      C HEADINGS FOR EACH ROW IN THE COST
6      C ARRAY.
7      C
8      C *****ARRAYS*****
9      C *****VARIABLES*****
10     C
11     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
12     C
13     C/
14     C
15     C
16     C SUBROUTINE SPREAD(A,NYEARS,NROWS)
17     C
18     C THIS ROUTINE SPREADS COSTS OVER MULTIPLE YEARS. IN THE MAIN, IT RECEI
19     C THE COSTS DELINEATED IN THE YEAR A PRODUCT IS RECEIVED AND SPREADS THE
20     C COSTS OVER THE TIME PERIOD THEY ACTUALLY OCCURRED.
21     C
22     C/
23     C
24     C SUBROUTINE SPREAD(A,NYEARS,NROWS)
25     C DIMENSION A(50,20)
26     C DATA IABC/3/
27     C CONTINUE
28     C 1407 FORMAT(* THIS ROUTINE DOES NOT EXIST.*)
29     C RETURN
30     C *DECK CAL
31     C END

```

2 19

SYMBOLIC REFERENCE MAP (E=2)

ENTRY POINTS	DEF LINE	REFERENCES			
3 SPREAD	27	32			
VARIABLES	SH TYPE	RELOCATION			
0 A	REAL	ARRAY F.P.	DEF	27	DEFINED
6 IABC	* INTEGER		DEFIN-D	25	
0 NROWS	INTEGER	*UNUSED F.P.	DEFIN-D	27	
9 NYEARS	INTEGER	*UNUSED F.P.	DEFIN-D	27	
STATEMENT LABELS	DEF LINE	REFERENCES			
7 1407	FPI NC ELES	31			

STATISTICS

PROGRAM LENGTH 145 12
520009 CM USED

2 20

```

1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C
6      C A(50,20) IS THE ARRAY CONTAINING THE ORIGINAL COST DATA. UPON
7      C RETURN FROM THIS SUBROUTINE IT CONTAINS THE COSTS AFTER
8      C SPREADING.
9      C
10     C B(50,30) IS USED IN CALCULATING THE SPREAD COST DATA.
11     C
12     C SPREAD(3) IS USED TO SPECIFY HOW THE COSTS ARE SPREAD.
13     C IF A COST IS ORIGINALLY SPECIFIED FOR YEAR J THEN THIS ROW
14     C CAN SPREAD THE COSTS OVER THE J+1 TO THE J+111 YEARS.
15     C SPR CAN CONTAIN 50 DIFFERENT SPREADING ARRAYS.
16     C
17     C *****ARRAYS*****
18     C
19     C *****VARIABLES*****
20     C
21     C IF IS AN INDEX THAT DELINEATES WHETHER AN EXPLANATION OF THIS
22     C ROUTINE WILL BE OUTPUT.
23     C
24     C IA DELINEATES IF THE DEFAULT ARRAY WILL BE ACCEPTED.
25     C IC HAS THE SAME FUNCTION AS IB.
26     C
27     C ID DELINEATES WHETHER EACH COST IS TO BE IDENTICALLY SPREAD.
28     C
29     C IE IS THE NUMBER OF DIFFERENT WAYS THE COST DATA WILL BE SPREAD
30     C IF DELINEATES THE SPREADING VERSION TO BE USED.
31     C
32     C KK IS USED TO DETERMINE THE FIRST NON-ZERO COST COLUMN
33     C OF ARRAY B AND TO SET THIS COLUMN EQUAL TO THE FIRST COLUMN
34     C IN ARRAY A.
35     C
36     C KA IS USED TO INDEX THE COLUMNS OF THE COST ARRAY. IT IS THE L
37     C NON-ZERO COLUMN NUMBER.
38     C
39     C NYEARS IS THE NUMBER OF YEARS OF INTEREST.-----NOTE. THIS VALUE
40     C MAY CHANGE AS THE RESULT OF SPREADING.
41     C
42     C NROWS IS THE NUMBER OF DIFFERENT COST ELEMENTS (ROWS) IN
43     C THE COST ARRAY.
44     C
45     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
46     C
47     C *****VARIABLES*****
48     C *****VARIABLES*****
49     C
50     C
51     C
52     C
53     C
54     C
55     C SUBROUTINE CALC(NYEARS,NROWS,PRODM,MEASH)
56     C THIS ROUTINE PROVIDES AN INTERFACE WITH THE ROUTINES THAT
57     C

```


C PERFORM CALCULATIONS. THE ROUTINE PROVIDES INITIAL PROMPTING TO THE U

69 C SO THAT DETAILED PROMPTING IS NOT REPEATED EVERY TIME A CALCULATING

C ROUTINE IS CALLED.

55

C/

SUBROUTINE CAL(18,NYEARS,NEOMS,PRODM,HE-DM)
 DIMENSION AISEL(21),COST(120),HEADM(5,1,1)
 INTEGER PRODM(10,20)
 DATA IASC/1/

70 CONTINUE
 ***1 FORMAT* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
 RETURN
 *DECK ESCALAT
 END

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS DEF LINE REFERENCES

3 CAL 56 72

VARIABLES SN TYPE RELOCATION

0 A	REAL	APRAY	F.P.	REFS	67	DEFINED	66
17 COST	REAL	*UNDEF		REFS	67		
9 HEADM	REAL	APRAY	F.P.	REFS	67	DEFINED	66
6 IASC	* INTEGER			REFS	63		
8 NEOMS	INTEGER	*UNDEF	F.P.	DEFINED	65		
8 NYEARS	INTEGER	*UNDEF	F.P.	DEFINED	65		
9 PRODM	INTEGER	APRAY	F.P.	REFS	68	DEFINED	66

STATEMENT LABELS DEF LINE REFERENCES

7 ***1 71

STATISTICS

PROGRAM LENGTH 438 35
 52408 CM USED

```

1      C
2      C
3      C *****ARRAYS*****
4      C
5      C      A(54,20) STORES COST DATA.
6      C
7      C      COST(120) TRANSFERS THE COST DATA OBTAINED FROM A
8      C      PARTICULAR CALCULATION.
9      C
10     C      PROM(10,20) CONTAINS THE PRODUCTION SCHEDULES. EACH
11     C      ELEMENT REPRESENTS 1 YEAR.
12     C
13     C      HEAD(15,45) CONTAINS THE HEADING FOR EACH ROW IN THE COST ARRAY
14     C
15     C *****ARRAYS*****
16     C *****VARIABLES*****
17     C
18     C      IA IS AN INDEX DELINEATING WHETHER AN EXPLANATION OF THE ROUTINE
19     C      IS REQUIRED.
20     C
21     C      NROWS IS THE NUMBER OF COST ELEMENTS IN THE COST ARRAY.
22     C
23     C      NYEARS IS THE NUMBER OF YEARS OVER WHICH COSTS OCCUR.
24     C
25     C      IB IS AN INDEX THAT DELINEATES THE TYPE OF CALCULATION TO BE
26     C      PERFORMED.
27     C
28     C      IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
29     C
30     C      KKK DELINEATES THE ROW OF THE COST ARRAY BEING CALCULATED.
31     C *****VARIABLES*****
32     C
33     C
34     C
35     C
36     C
37     C      SUBROUTINE ESCALAT (A,B,NYEARS,NROWS)
38     C
39     C      THIS ROUTINE RECEIVES COST DATA IN BASELINE YEAR DOLLARS AND TRANSFORM
40     C      THE DATA INTO THEN YEAR DOLLARS OR INTO DIFFERENT BASELINE DOLLARS.
41     C
42     C      THE COMPUTATIONAL PROCEDURE IS AS FOLLOWS:*****THE ARRAY,
43     C      C 4, CONTAINS THE COSTS PER SEGMENT PER YEAR IN A GIVEN YEAR DOLLARS.
44     C
45     C      BY SPECIFYING THE APPROPRIATE INFLATION OR DEFLATION FACTORS, OR A
46     C
47     C      SET OF DEFAULT VALUES, THE COSTS ARE TRANSFORMED.
48     C
49     C      THE BASELINE YEAR DOES NOT HAVE TO BE THE YEAR CORRESPOND-
50     C      ING TO THE FIRST ELEMENT OF THE ESCALATION ARRAY, BUT THE CORRESPON-
51     C      DANCE MUST BE SPECIFIED.
52     C

```



```

115      9*, / ,
116      1 THE BASELINE YEAR (1975) IS 1, SINCE SOME INFLATION OCCURS IN THE
117      9*, / ,
118      2 BASELINE YEAR WHEN USING WEIGHTED INDICES. THE ELEMENT CORRESPOND
119      9*, / ,
120      3 ING TO THE FIRST YEAR OF ANALYSIS (1975) IS 5, HENCE THE COSTS IN
121      9*, / ,
122      4 ACQUIRED IN 1974 ARE MULTIPLIED BY 1.12466, --- WHEN DEALING WITH A NE
123      9*, / ,
124      5 SIGHTED ESCALATION INDEX THE DOLLARS IN THE BASE YEAR ARE MULTIPLIE
125      9*, / ,
126      6 D BY A NUMBER OTHER THAN ONE, SAY 1.125, * )
127      920 CONTINUE
128      100 FORMAT(10, ' IF CUMULATIVE VALUES ARE TO BE INPUT FOR THE ESCALATION A
129      *RRAY*, / , * ENTER 7, OTHERWISE ENTER 1, * )
130      READ*, ICM
131      IF (EOF(5)) 9020, 8620
132      8020 CONTINUE
133      WRITE(4, *) ICM
134      IF (ICM.EQ.555) WRITE(6, 2000)
135      DO 100 I=1, 50
136      DO 100 J=1, 20
137      100 B(I,J)=6.
138      C** SET TO ZERO THE ARRAY THAT WILL CONTAIN THE ESCALATED ARRAY.
139      C
140      C** DISPLAY ESCALATION ARRAY.
141      9000 CONTINUE
142      1000 FORMAT(10, ' ENTER 1 IF YOU WISH TO SEE THE DEFAULT ESCALATION ARRAY.
143      * OTHERWISE ENTER 2* )
144      READ*, IY
145      IF (EOF(5)) 9000, 8000
146      8000 CONTINUE
147      WRITE(4, *) IY
148      IF (IY.EQ.555) WRITE(6, 2000)
149      IF (IY.NE.1) GO TO 10
150      CONTINUE
151      11 FORMAT(10F6.3, /, '0', '0', '0F6.3)
152      C** DISPLAY ESCALATION ARRAY.
153      C
154      C** ACCEPT ESCALATION ARRAY.
155      10 CONTINUE
156      1001 FORMAT(10, ' ENTER 1 IF YOU WISH TO ACCEPT THE DEFAULT ESCALATION AREA
157      *Y, OTHERWISE ENTER 2* )
158      READ*, IY
159      IF (EOF(5)) 10, 8010
160      8010 CONTINUE
161      WRITE(4, *) IY
162      IF (IY.EQ.555) WRITE(6, 2000)
163      IF (IY.EQ.1) GO TO 12
164      C** ACCEPT ESCALATION ARRAY.
165      C
166      C** CONSTRUCT ESCALATION AREA.
167      9001 CONTINUE
168      1002 FORMAT(10, ' ENTER THE NUMBER OF THE ELEMENT OF THE ESCALATION ARRAY I
169      *O BE CHANGED FOLLOWED BY A COMMA AND THE NEW VALUE, * / , * * REPEAT
170      * UNTIL ALL DESIRED CHANGES HAVE BEEN MADE, THEN ENTER 102, * )
171      13 READ*, IZ, C

```

IFIEOF(5)190.1,0001
8301 CONTINUE

175 WRITE(4,*)I2,C
IF(I2.EQ.100)GO TO 12
ESC(I2)=C
GO TO 13

C** CONSTRUCT ESCALATION ARRAY.

180 C** DEVELOP ESCALATION ARRAY SO THAT IT CORRESPONDS WITH ARRAY TO BE ESC

12 CONTINUE
IF(I2.EQ.100)GO TO 3002
DO 5792 I7=1,19

5792 ESC(I7-I7)=ESC(21-I7)/ESC(20-I7)

9302 CONTINUE

1806 FORMAT(* IF A CHANGE IN BASELINE IS DESIRED, AS OPPOSED TO A TRANS
FORMATION TO THEN YEAR DOLLARS, ENTER 1, OTHERWISE ENTER 2*)

READ*,IS

IFIEOF(5)190.2,0002

190 8002 CONTINUE

WRITE(4,*)IS

IF(IS.EQ.555) WRITE(6,2000)

IF(IS.EQ.1)GO TO 831

9303 CONTINUE

1803 FORMAT(* ENTER THE ELEMENT OF THE ESCALATION ARRAY THAT CORRESPOND
S TO THE BASELINE YEAR)

READ*,IL

IFIEOF(5)190.3,0003

8003 CONTINUE

WRITE(4,*)IL

IF(IL.EQ.555) WRITE(6,2000)

IL=IL-1

IL=IL+1

ES(IL)=1

IF(IL.AE.1)GO TO 80

DO 15 I=1,ILA

15 ES(IL-I)=ES(IL-I+1)/ESC(IL-I+1)

80 CONTINUE

IF(ILA.GT.20)GO TO 83

DO 16 I=1,ILB,20

16 ES(IL)=ES(IL-1)*ESC(I)

89 CONTINUE

9304 CONTINUE

1804 FORMAT(* ENTER THE ELEMENT OF THE ESCALATION ARRAY WHICH CORRESPOND
S WITH THE FIRST YEAR OF THE ANALYSIS)

READ*,ID

IFIEOF(5)190.4,0004

8004 CONTINUE

WRITE(4,*)ID

IF(ID.EQ.555) WRITE(6,2000)

IL=20-ID-NYEARS

IF(IL.EQ.0)CONTINUE

1805 FORMAT(* THE DIMENSION OF THE ESCALATION ARRAY MUST BE INCREASED 0
9 THE PROGRAM OR INPUT DATA OTHERWISE MODIFIED.)

IF(IL.LT.1)RETURN

KK=1

DO 25 I=1,0.20

ES(KK)=ES(I)

```

230      25 KK=KK+1
        DO 26 I=1,NYEARS
          DO 26 J=1,NROWS
            26 3(I,J)=A(I,J)*ES(I)
          C** DEVELOP ESCALATION ARRAY SO THAT IT CORRESPONDS WITH ARRAY TO BE ESC
          C
235      RETURN
        831 CONTINUE
        1007 FORMAT(' ENTER THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING T
        * TO THE PRESENT BASELINE YEAR AND THEN THE ELEMENT CORRESPONDING * , / ,
        ** TO THE NEW BASELINE YEAR * )
        READ*,MOLD,MNEW
        IF(EOF(5)) 831,8831
        831 CONTINUE
        WRITE(4,*)MOLD,MNEW
        IF(MOLD.LI.MNEW)GO TO 832
        IO=MOLD-MNEW
        AX=1.
        DO 833 I=1,IO
          833 AX=AX/ES(MNEW+I)
          GO TO 85
        832 IO=MNEW-MOLD
        AX=1.
        DO 834 I=1,IO
          834 AX=AX*ESC(MOLD+I)
          850 DO 861 I=1,NROWS
            861 3(I,I)=A(I,I)*AX
          RETURN
        C
260      2000 FORMAT(11X,'ROUTINE HELP DOES NOT EXIST IN EAGLE2* )
        END

```

2 26

SYMBOLIC REFERENCE MAP (F=2)

ENTRY POINTS	DEF LINE	REFERENCES	225	235	257
3 ESCALAT	59	225	235	257	
VARIABLES	SN	TYPE	RELOCATION		
1207 AX	REAL	REAL	AREAY F.P.	REFS	59
				248	246
				253	256
1213 C	REAL	REAL	AREAY F.P.	REFS	137
				174	171
1234 ES	REAL	REAL	AREAY F.P.	REFS	232
				207	228
				207	225
1210 ESC	REAL	REAL	AREAY F.P.	REFS	246
				207	211
				207	211
1166 I	INTEGER	INTEGER	AREAY F.P.	REFS	253
				137	246
				135	230
				206	247
1165 IABC	INTEGER	INTEGER	AREAY F.P.	REFS	130
				254	
				133	
				134	
				182	
				182	
				130	

VARIABLES	SM	TYPE	RELOCATION	REFS	219	220	221	227	DEFINED	216
1201 IO	INTEGER			REFS	222	225	DEFINED	221		
1202 IE	INTEGER			REFS	71	72	DEFINED	61		
1164 IEXPL	INTEGER			REFS	206	201	202	203	204	3+207
1176 IL	INTEGER			DEFINED	147					
1177 IJA	INTEGER			REFS	205	206	DEFINED	202		
1200 IL9	INTEGER			REFS	209	210	DEFINED	203		
1206 IO	INTEGER			REFS	247	252	DEFINED	245	250	
1175 IS	INTEGER			REFS	191	192	193	DEFINED	166	
1178 IX	INTEGER			REFS	147	148	149	DEFINED	144	
1171 IV	INTEGER			REFS	161	162	163	DEFINED	150	
1172 JZ	INTEGER			REFS	174	175	176	DEFINED	171	
1174 J7	INTEGER			REFS	3+184	DEFINED	183			
1167 J	INTEGER			REFS	137	2+232	2+256	DEFINED	136	231
1203 KK	INTEGER			REFS	228	229	DEFINED	226	229	255
1205 MNEW	INTEGER			REFS	243	244	245	248	250	
1204 MOLD	INTEGER			DEFINED	240					
				REFS	243	244	245	250	253	
0 MROWS	INTEGER		F.P.	DEFINED	240	254	DEFINED	53		
0 MYEARS	INTEGER		F.P.	REFS	221	230	255	DEFINED	59	
FILE NAMES	MODE									
IMPUT	FREE			READS	64	133	144	171	180	197
				240						216
TAPE4	FREE			WRITES	72	133	147	161	191	200
				243						219
TAPE6	FMT			WRITES	71	134	148	162	241	224
EXTERNALS	TYPE	ARGS	REFERENCES							
EOF	REAL	1	69	131	145	155	172	189	193	217
STATEMENT LABELS	DEF LINE	REFERENCES								
71 10	155	149	151							
715 11	FMT NO REFS	151	163	175						
117 12	161	171	177							
105 13	171	177	206							
0 15	207	210	211							
0 16	211	210	227							
0 25	223	227	230	231						
0 26	232	230	205							
172 08	206	212	203							
202 99	212	203	135							
0 180	137	135								
361 616	FMT NO REFS	75								
334 688	FMT NO REFS	66								
253 831	236	193	241							
276 832	252	244								
C 833	246	247								
0 834	252	253								
312 850	254	249								
0 861	255	256								
671 1000	FMT NO REFS	142								
721 1001	FMT NO REFS	156								
745 1002	FMT NO REFS	164								
1033 1003	FMT NO REFS	195								
1057 1014	FMT NO REFS	214								

1 *DECK NEMRA

C/

C *****ARRAYS*****

5 A(50,20) IS THE ARRAY TO BE ESCALATED.

B(50,20) IS THE ARRAY AFTER ESCALATION.

10 ESC(2,1) IS THE DEFAULT ESCALATION ARRAY.

ES(20) IS THE OPERATIONAL ESCALATION ARRAY.

C *****ARRAYS*****

C *****VARIABLES*****

15 IX DETERMINES IF THE DEFAULT ESCALATION ARRAY IS TO BE DISPLAYED

1=DISPLAYED

2=NOT DISPLAYED

20 IY DETERMINES WHETHER THE DEFAULT ESCALATION ARRAY IS TO BE ACCEPTED IN IOTO.

1=ACCEPTED

2=NOT ACCEPTED IN IOTO.

25 IZ IS THE ELEMENT OF THE DEFAULT ESCALATION ARRAY TO BE CHANGED

30 IJ IS THE NEW VALUE FOR THE IZ ELEMENT.

35 ID IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE FIRST YEAR OF THE ANALYSIS.

40 KK IS AN INDEX USED IN MAKING THE ELEMENTS OF ES(I,J) PROPERLY CORRESPOND TO THOSE OF A(I,...).

43 MOLD IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE EXISTING BASELINE YEAR.

45 WHEN IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE NEW BASELINE YEAR.

ICUM EQUALS 7 IF CUMULATIVE VALUES ARE TO BE INPUT INTO THE ESCALATION ARRAY.

50 C *****VARIABLES*****

C/

55 SUBROUTINE NEMFAUKK,RATES,1,1,UNIT,A)

GIVEN THE OLD AND NEW LEARNING RATES, BOTH CONTAINED IN ARRAY RATE

C

C THE PRODUCTION NUMBER OF THE UNIT WITH WHICH THE CHANGE IS TO COMM

C CONTAINED IN ARRAY IUNIT, AND INDEX KK, THEN THE NEW RATE IS

C KNOWN AND A NEW T1 CAN BE DETERMINED SO THAT THE COST OF THE LAST

C ARTICLE PRODUCED USING THE PREVIOUS LEARNING RATE REMAINS UNCHANGE

C THE FORMULA IS

C $T1(NEW) = T1(OLD) * (PREVIOUS ARTICLE NUMBER ** (OLD RATE - NEW RATE))$

C/

C SUBROUTINE MEMRA(KK,RATES,T1,IUNIT,4)

C DIMENSION RATES(10),IUNIT(10)

C DATA TABC/13/

C CONTINUE

C 4401 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)

C RETURN

C *DECK CALS

C END

2 30

SYMBOLIC REFERENCE MAP (532)

ENTRY POINTS	DEF LINE	REFERENCES
3 MEMRA	72	77

VARIABLES	SN	TYPE	RELOCATION
0 A	REAL	*UNUSED	F.P. 72
6 TABC	* INTEGER	DEFINED	74
8 IUNIT	INTEGER	ARRAY	F.P. 73
C KK	INTEGER	*UNUSED	F.P. 72
0 RATES	REAL	ARRAY	F.P. 73
0 T1	REAL	*UNUSED	F.P. 72

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	FMT NO REFS	76

STATISTICS	PROGRAM LENGTH	170	15
520008	CH USED		

```

1      C/
2      C *****ARRAYS*****
5      C
6      C IUNIT(10) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
7      C NEW LEARNING RATE BECOMES APPLICABLE
8      C
9      C RATES(10) CONTAINS THE LEARNING RATES WHICH WILL EXIST OVER THE
10     C PRODUCTION LIFE.
11     C *****APRAYS*****
12     C *****VARIABLES*****
13     C
14     C KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
15     C AND IUNIT.
16     C
17     C T1 IS THE COST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A N
18     C VALUE OF T1 IS CALCULATED AT EACH CHANGE IN THE LEARNING R
19     C B IS LN(OLD LEARNING RATE)/LN(2.)
20     C A IS LN(NEW LEARNING RATE)/LN(2.)
21     C
22     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
23     C *****VARIABLES*****
24     C/
25     C SUBROUTINE CALS(A,COST,NYEARS,PRODM,KKK)
26     C
27     C IT IS NOT UNUSUAL FOR A COST ELEMENT (ROW OF THE COST ARRAY) TO BE COM
28     C OF THE SUM OF TWO OR MORE COSTS OBTAINED FROM SEPARATE CALCULATIONS.
29     C
30     C CALS ACCOMPLISHES THIS OVERALL CALCULATION BY STORING THE CUMULATIVE C
31     C IN ARRAY TCOST. THE USER SPECIFIES THE NUMBER OF SEPARATE CALCULATION
32     C TO BE MADE.
33     C/
34     C
35     C SUBROUTINE CALS(A,COST,NYEARS,PRODM,KKK)
36     C DIMENSION A(50,20),COST(20),TCOST(20)
37     C INTEGER FROM(10,20)
38     C DATA IABC/17/
39     C CONTINUE
40     C FORMAT(10) THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*
41     C RETURN
42     C *DECK PRODUCE
43     C END

```

SYMBOLIC REFERENCE MAP (K=2)

ENTRY POINTS DEF LINE REFERENCES

3 CALS 45 51

VARIABLES SM IYP. RELOCATION

0 A	PEAL	ARRAY	F.P.	REFS	46	DEFINED	45
0 COST	PEAL	ARRAY	F.P.	REFS	46	DEFINED	45
6 IABC	* INTEGER			DEFINED	49		
6 KKK	INTEGER	*UNUSED	F.P.	DEFINED	43		
6 MYEARS	INTEGER	*UNUSED	F.P.	DEFINED	45		
3 PRDCH	INTEGER	AREALY	F.P.	REFS	47	DEFINED	45
17 TCOST	PEAL	*UNDEF		REFS	46		

STATEMENT LABELS DEF LINE REFERENCES

7 4441 FMT NO REFS 50

STATISTICS

PROGRAM LENGTH 436 35
520008 CM USED

2 33

```

1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C
6      C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES,
7      C
8      C COST(20) STORES AND TRANSFERS THE COST INFORMATION EACH TIME AN
9      C INTERFACE WITH ANOTHER ROUTINE IS MADE.
10     C
11     C TCOST(20) STORES THE CUMULATIVE COSTS AS THE CALCULATION IS
12     C BEING MADE.
13     C
14     C A(50,20) CONTAINS THE BASELINE COST INFORMATION
15     C TO BE OUTPUT.
16     C
17     C *****ARRAYS*****
18     C
19     C *****VARIABLES*****
20     C
21     C IA INDICATES THE NUMBER OF SEPARATE CALCULATIONS THAT WILL BE MADE
22     C
23     C IP IS AN INDEX USED TO DETERMINE THE SUBROUTINE TO BE CALLED.
24     C
25     C NYEARS IS THE NUMBER OF YEARS OVER WHICH THE COST CALCULATION IS
26     C
27     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
28     C
29     C KKK IS THE FORM OF THE COST ARRAY BEING CALCULATED.
30     C
31     C *****VARIABLES*****
32     C
33     C
34     C
35     C SUBROUTINE PRODMC(PRODM)
36     C
37     C THIS ROUTINE IS USED TO SPECIFY THE PRODUCTION SCHEDULES, WHICH ARE ST
38     C
39     C IN ARRAY PRODM. ELEMENT (10,20) OF PRODM RECORDS THE NUMBER OF SCHEDULES
40     C
41     C/
42     C
43     C SUBROUTINE PRODMC(PRODM)
44     C INTEGER PRODM(10,20)
45     C DATA IABC/6/
46     C CONTINUE
47     C 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE. ')
48     C RETURN
49     C *DECK OUT
50     C ENC

```

SYMBOLIC REFERENCE MAP (K=2)

FTN 4.64446 04/20/76 00.56.30

SUBROUTINE PROLOC 74/74 OPT=1

ENTRY POINTS DEF LINE REFERENCES

3 PROLOC 43 46

VARIABLES SN TYPE RELOCATION

6 IABC * INTEGER

7 PROD4 INTEGER

8 PROD4 ARRAY F.O.

9 PROD4 F.O.

10 PROD4 F.O.

11 PROD4 F.O.

12 PROD4 F.O.

13 PROD4 F.O.

14 PROD4 F.O.

15 PROD4 F.O.

16 PROD4 F.O.

17 PROD4 F.O.

18 PROD4 F.O.

19 PROD4 F.O.

20 PROD4 F.O.

21 PROD4 F.O.

22 PROD4 F.O.

23 PROD4 F.O.

24 PROD4 F.O.

25 PROD4 F.O.

26 PROD4 F.O.

27 PROD4 F.O.

28 PROD4 F.O.

29 PROD4 F.O.

30 PROD4 F.O.

31 PROD4 F.O.

32 PROD4 F.O.

33 PROD4 F.O.

34 PROD4 F.O.

35 PROD4 F.O.

36 PROD4 F.O.

37 PROD4 F.O.

38 PROD4 F.O.

39 PROD4 F.O.

40 PROD4 F.O.

41 PROD4 F.O.

42 PROD4 F.O.

43 PROD4 F.O.

44 PROD4 F.O.

45 PROD4 F.O.

46 PROD4 F.O.

47 PROD4 F.O.

48 PROD4 F.O.

49 PROD4 F.O.

50 PROD4 F.O.

51 PROD4 F.O.

52 PROD4 F.O.

53 PROD4 F.O.

54 PROD4 F.O.

55 PROD4 F.O.

56 PROD4 F.O.

57 PROD4 F.O.

58 PROD4 F.O.

59 PROD4 F.O.

60 PROD4 F.O.

61 PROD4 F.O.

62 PROD4 F.O.

63 PROD4 F.O.

STATEMENT LABELS DEF LINE REFERENCES

7 4441 FMI NO REFS 47

STATISTICS

PROGRAM LENGTH

520000 CM USED

178 15

```

1      C
2      C/
3      C *****ARRAYS*****
4      C
5      C PRODM(10,20) THIS ARRAY CONTAINS THE PRODUCTION SCHEDULES. EACH
6      C REPRESENTS 1 YEAR. ELEMENT (1,20) RECORDS THE NUMBER OF
7      C *****ARRAYS*****
8      C
9      C *****VARIABLES*****
10     C
11     C IA IS AN INDEX USED TO SPECIFY THE NUMBER OF PRODUCTION SCHEDULE
12     C
13     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
14     C *****VARIABLES*****
15     C
16     C
17     C/
18     C
19     C SUBROUTINE OUT(A,NYEARS,NPCMS,HEADW)
20     C
21     C THIS ROUTINE OUTPUTS CALCULATED COSTS, BY YEAR AND TYPE. EITHER OF TH
22     C FORMATS: I, E OR F, CAN BE SPECIFIED. AN APPROPRIATE TABLE HEADING CA
23     C DELINEATED.
24     C/
25     C
26     C SUBROUTINE OUT(A,NYEARS,NPCMS,HEADW)
27     C
28     C DIMENSION A(50,20),I7Z(20),HEADW(50,1)
29     C JIMENSION NAME(12),TITLE(8)
30     C INTEGER HEADW
31     C DATA IBLANK/1H /
32     C DATA NAME(1)/10H
33     C DATA IABC/5/
34     C DO 1492 IXY=2,12
35     C 1492 NAME(IXY)=NAME(1)
36     C NENROWS=1
37     C NX=NYEARS+1
38     C DO 80 I=1,NYEARS
39     C 80 A(I,1)=0.
40     C DO 81 I=1,NENROWS
41     C 81 A(I,1,NX)=0.
42     C AIN,NXI=0.
43     C DO 82 I=1,NYEARS
44     C 82 J=1,NENROWS
45     C AIN,I)=A(I,I)+A(J,I)
46     C A(I,NXI)=A(I,NXI)+A(J,I)
47     C DO 83 I=1,NYEARS
48     C 83 AIN,NXI)=AIN,NXI)+AIN,I)
49     C
50     C 9227 CONTINUE
51     C 1927 FORMAT(5X,ENTER 1 TO CHANGE AN ELEMENT OF THE COST ARRAY, OTHERWISE
52     C * 2*)
53     C READ*,I5
54     C IF (EOF(5)) 9027,8027

```



```
0027 CONTINUE
WRITE(6,*)15
IF(15.EQ.555) WRITE(6,2000)
IF(15.EQ.1)CALL ELEMENT(1)
INUM=6
9000 CONTINUE
1011 FORMAT( IF YOU DESIRE REMOTE PRINTOUT ENTER 1, OTHERWISE 2. )
READ*,IFLAG
IF (EOF(5))9000,9000
0000 CONTINUE
WRITE(4,*)IFLAG
IF(IFLAG.EQ.555) WRITE(6,2000)
IF(IFLAG.EQ.1)INUM=3
C. *****HEADING DETERMINATION*****
2593 CONTINUE
1592 FORMAT( SPECIFY A TITLE, 48 CHARACTERS OR LESS, CENTERED 39 SPACE
15 FROM THE LEFT. )
READ,1593,1TITLE(1X),1X(=1,8)
1593 FORMAT(8A10)
1594 CONTINUE
3593 CONTINUE
WRITE(6,7029)1TITLE(1X),1X(=1,8)
7029 FORMAT(8A10)
9001 CONTINUE
1010 FORMAT( IF 1-FORMAT IS DESIRED ENTER 1, FOR MILLIONS ENTER 2, FOR
* THOUSANDS ENTER 3. )
READ*,11
IF(EOF(5))3001,0001
0001 CONTINUE
WRITE(6,*)11
IF(11.EQ.555) WRITE(6,2000)
9002 CONTINUE
1001 FORMAT( SHOULD THE TABLE HEADING READ BASELINE, THEN YEAR, OR A S
SPECIFIC YEAR DOLLARS---ENTER 1, 2, OR 3 RESPECTIVELY )
READ*,1X
IF(EOF(5))3002,0002
0002 CONTINUE
WRITE(6,*)1X
IF(1X.EQ.555) WRITE(6,2000)
9003 IF(1X.EQ.3)CONTINUE
1002 FORMAT( ENTER THE YEAR IN QUESTION. )
IF(1X.EQ.3)READ*,1Y
IF(EOF(5))9003,0003
0003 CONTINUE
IF(1X.EQ.3)WRITE(4,*)1Y
IF(1Y.EQ.555.AND.1X.EQ.3) WRITE(6,2000)
9004 CONTINUE
1003 FORMAT( SPECIFY THE FIRST YEAR. )
READ*,1Z
IF(EOF(5))3004,0004
0004 CONTINUE
WRITE(6,*)1Z
IF(1Z.EQ.555) WRITE(6,2000)
127711117
9005 CONTINUE
1004 FORMAT( ENTER 1 FOR FISCAL YEARS OR 2 FOR CALENDAR YEARS. )
READ*,1A
```

2 30

```
115 IF (EOF(5)) 9005,9005
      ADD5 CONTINUE
      WRITE(*,*)IA
      IF (IA.EQ.555) WRITE(6,2000)

120 9026 CONTINUE
1026 FORMAT(0 IF THE FIRST COLUMN IS TO BE TITLED "PREVIOUS COSTS" ENTE
      *R 1. OTHERWISE 2.---MAKE RESPONSE AND ADJUST PAPER BEFORE DEPRESSI
      NG RETURN KEY. *)
      READ*,L4
      IF (EOF(5)) 9026,9026
      9026 CONTINUE
      WRITE(6,*)L4
      IF (L4.EQ.555) WRITE(6,2000)
      C *****HEADING DETERMINATION.*****
      C *****PRINT HEADINGS.*****
      WRITE(INUM,4,17) (TITLE(IX),IX=1,8)
      8017 FORMAT('1',2F10)
      IF (IX.EQ.1) WRITE(INUM,21)
      IF (IX.EQ.2) WRITE(INUM,22)
      IF (IX.EQ.3) WRITE(INUM,23)
      21 FORMAT(' ',30X,"BASELINE YEAR DOLLARS")
      22 FORMAT(' ',30X,"THEN YEAR DOLLARS")
      23 FORMAT(' ',3,1X," YEAR DOLLARS")
      IF (IX.EQ.2) WRITE(INUM,137)
      137 FORMAT(' ',32X,"(IN MILLIONS)")
      IF (IX.EQ.3) WRITE(INUM,138)
      138 FORMAT(' ',32X,"(IN THOUSANDS)")
      IF (IA.NE.1) WRITE(INUM,31)
      31 FORMAT('0', "FISCAL YEARS")
      31 FORMAT('0', "CALENDAR YEARS")
      00 25 1=2,NYEARS
      127(1)=17+1
      NYEARS=NYEARS-1
      IF (L4.NE.1) GO TO 643
      WRITE(INUM,5626)
      5626 FORMAT(' ',3X,"PREVIOUS")
      WRITE(INUM,5627) (JZLJ),JZLJ=1,NY,ARX)
      5627 FORMAT(' ',4X,"COSTS",11X,0(14,9X))
      IF (NYEARS.EQ.1) WRITE(INUM,61)
      IF (NYEARS.EQ.2) WRITE(INUM,62)
      IF (NYEARS.EQ.3) WRITE(INUM,63)
      IF (NYEARS.EQ.4) WRITE(INUM,64)
      IF (NYEARS.EQ.5) WRITE(INUM,65)
      IF (NYEARS.EQ.6) WRITE(INUM,66)
      IF (NYEARS.EQ.7) WRITE(INUM,67)
      IF (NYEARS.EQ.8) WRITE(INUM,68)
      61 FORMAT(' ',19X,"TOTAL")
      62 FORMAT(' ',32X,"TOTAL")
      63 FORMAT(' ',45X,"TOTAL")
      64 FORMAT(' ',50X,"TOTAL")
      65 FORMAT(' ',71X,"TOTAL")
      66 FORMAT(' ',84X,"TOTAL")
      67 FORMAT(' ',97X,"TOTAL")
      68 FORMAT(' ',110X,"TOTAL")
      GO TO 644
      643 CONTINUE
```

```
LEARS=6
M123X=N YEARS
NYP1=0
175 IF (N YEARS.GT.8) LEARS=N YEARS
IF (N YEARS.GT.8) NYP1=9
IF (N YEARS.GT.8) N YEARS=8
WRITE (INUM,26) (I=1,N YEARS)
26 FORMAT(' ',2X,41A,9X)
180 IF (NYP1.EQ.9) WRITE (INUM,26) (I=1,N YEARS)
IF (NYP1.EQ.9) N YEARS=LEARS-8
IF (N YEARS.EQ.1) WRITE (INUM,71)
IF (N YEARS.EQ.2) WRITE (INUM,72)
IF (N YEARS.EQ.3) WRITE (INUM,73)
IF (N YEARS.EQ.4) WRITE (INUM,74)
IF (N YEARS.EQ.5) WRITE (INUM,75)
IF (N YEARS.EQ.6) WRITE (INUM,76)
IF (N YEARS.EQ.7) WRITE (INUM,77)
IF (N YEARS.EQ.8) WRITE (INUM,78)
190 JX12=M123X+2
IF (M123X.GT.8) JX12=JX12+1
IF (M123X.GT.6) JX12=JX12+1
IF (JX12.GE.12) JX12=12
195 71 FORMAT(' ',19X,'TOTAL')
72 FORMAT(' ',32X,'TOTAL')
73 FORMAT(' ',45X,'TOTAL')
74 FORMAT(' ',56X,'TOTAL')
75 FORMAT(' ',71X,'TOTAL')
76 FORMAT(' ',86X,'TOTAL')
77 FORMAT(' ',97X,'TOTAL')
78 FORMAT(' ',118X,'TOTAL')
200 WRITE (INUM,1193) (NAME(I,1),I=1,J=1,J=1,JX12)
1193 FORMAT(100,12A18)
IF (NYP1.EQ.9) N YEARS=LEARS
205 C *****PRINT HEADINGS.*****
C *****PRINT OUTPUT.*****
DO 41 I=1,NROWS
210 WRITE (INUM,41) (HEAD(I),I=1,6)
41 FORMAT(' ',9F10)
IF (N YEARS.EQ.8) GO TO 2456
IF (I1.EQ.1) WRITE (INUM,42) (A(I),I=1,NX)
IF (I1.EQ.2) WRITE (INUM,43) (A(I),I=1,NX)
IF (I1.EQ.3) WRITE (INUM,44) (A(I),I=1,NX)
215 42 FORMAT(' ',8F13.4)
43 FORMAT(' ',8(-6PF13.3))
44 FORMAT(' ',8(-3PF13.3))
GO TO 48
2256 IF (I1.EQ.1) WRITE (INUM,52) (A(I),I=1,NX)
IF (I1.EQ.2) WRITE (INUM,53) (A(I),I=1,NX)
IF (I1.EQ.3) WRITE (INUM,54) (A(I),I=1,NX)
220 52 FORMAT(' ',9F13.4)
53 FORMAT(' ',9(-6PF13.3))
54 FORMAT(' ',9(-3PF13.3))
225 46 CONTINUE
C *****PRINT OUTPUT.*****
DO 2285 I=1,25
PRINT 7(06,16) LANK
```

2 38

7000 FORMAT(A1C)

7005 CONTINUE

47 RETURN

2000 FORMAT(10X,*FOUNTINE HELP NOT AVAILABLE IN EAGLE2*)
END

CARD NR. SEVERITY DETAILS DIAGNOSIS OF PROBLEM

120 I 23CD 122 TOTAL RECORD LENGTH IS GREATER THAN 137 CHARACTERS. IT MAY EXCEED THE I/O DEVICE CAPACITY.

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS DEF LINE REFERENCES
3 OUT 31 231

VARIABLES		SN	TYPE	FEAL	ARRAY	F.P.	RELOCATION	
0	A							
1604	I	32	INTEGER	214		214	212	213
1604	I	40	INTEGER	214		214	212	213
1604	I	48	INTEGER	214		214	212	213
1604	I	56	INTEGER	214		214	212	213
1604	I	64	INTEGER	214		214	212	213
1604	I	72	INTEGER	214		214	212	213
1604	I	80	INTEGER	214		214	212	213
1604	I	88	INTEGER	214		214	212	213
1604	I	96	INTEGER	214		214	212	213
1604	I	104	INTEGER	214		214	212	213
1604	I	112	INTEGER	214		214	212	213
1604	I	120	INTEGER	214		214	212	213
1604	I	128	INTEGER	214		214	212	213
1604	I	136	INTEGER	214		214	212	213
1604	I	144	INTEGER	214		214	212	213
1604	I	152	INTEGER	214		214	212	213
1604	I	160	INTEGER	214		214	212	213
1604	I	168	INTEGER	214		214	212	213
1604	I	176	INTEGER	214		214	212	213
1604	I	184	INTEGER	214		214	212	213
1604	I	192	INTEGER	214		214	212	213
1604	I	200	INTEGER	214		214	212	213
1604	I	208	INTEGER	214		214	212	213
1604	I	216	INTEGER	214		214	212	213
1604	I	224	INTEGER	214		214	212	213
1604	I	232	INTEGER	214		214	212	213
1604	I	240	INTEGER	214		214	212	213
1604	I	248	INTEGER	214		214	212	213
1604	I	256	INTEGER	214		214	212	213
1604	I	264	INTEGER	214		214	212	213
1604	I	272	INTEGER	214		214	212	213
1604	I	280	INTEGER	214		214	212	213
1604	I	288	INTEGER	214		214	212	213
1604	I	296	INTEGER	214		214	212	213
1604	I	304	INTEGER	214		214	212	213
1604	I	312	INTEGER	214		214	212	213
1604	I	320	INTEGER	214		214	212	213
1604	I	328	INTEGER	214		214	212	213
1604	I	336	INTEGER	214		214	212	213
1604	I	344	INTEGER	214		214	212	213
1604	I	352	INTEGER	214		214	212	213
1604	I	360	INTEGER	214		214	212	213
1604	I	368	INTEGER	214		214	212	213
1604	I	376	INTEGER	214		214	212	213
1604	I	384	INTEGER	214		214	212	213
1604	I	392	INTEGER	214		214	212	213
1604	I	400	INTEGER	214		214	212	213
1604	I	408	INTEGER	214		214	212	213
1604	I	416	INTEGER	214		214	212	213
1604	I	424	INTEGER	214		214	212	213
1604	I	432	INTEGER	214		214	212	213
1604	I	440	INTEGER	214		214	212	213
1604	I	448	INTEGER	214		214	212	213
1604	I	456	INTEGER	214		214	212	213
1604	I	464	INTEGER	214		214	212	213
1604	I	472	INTEGER	214		214	212	213
1604	I	480	INTEGER	214		214	212	213
1604	I	488	INTEGER	214		214	212	213
1604	I	496	INTEGER	214		214	212	213
1604	I	504	INTEGER	214		214	212	213
1604	I	512	INTEGER	214		214	212	213
1604	I	520	INTEGER	214		214	212	213
1604	I	528	INTEGER	214		214	212	213
1604	I	536	INTEGER	214		214	212	213
1604	I	544	INTEGER	214		214	212	213
1604	I	552	INTEGER	214		214	212	213
1604	I	560	INTEGER	214		214	212	213
1604	I	568	INTEGER	214		214	212	213
1604	I	576	INTEGER	214		214	212	213
1604	I	584	INTEGER	214		214	212	213
1604	I	592	INTEGER	214		214	212	213
1604	I	600	INTEGER	214		214	212	213
1604	I	608	INTEGER	214		214	212	213
1604	I	616	INTEGER	214		214	212	213
1604	I	624	INTEGER	214		214	212	213
1604	I	632	INTEGER	214		214	212	213
1604	I	640	INTEGER	214		214	212	213
1604	I	648	INTEGER	214		214	212	213
1604	I	656	INTEGER	214		214	212	213
1604	I	664	INTEGER	214		214	212	213
1604	I	672	INTEGER	214		214	212	213
1604	I	680	INTEGER	214		214	212	213
1604	I	688	INTEGER	214		214	212	213
1604	I	696	INTEGER	214		214	212	213
1604	I	704	INTEGER	214		214	212	213
1604	I	712	INTEGER	214		214	212	213
1604	I	720	INTEGER	214		214	212	213
1604	I	728	INTEGER	214		214	212	213
1604	I	736	INTEGER	214		214	212	213
1604	I	744	INTEGER	214		214	212	213
1604	I	752	INTEGER	214		214	212	213
1604	I	760	INTEGER	214		214	212	213
1604	I	768	INTEGER	214		214	212	213
1604	I	776	INTEGER	214		214	212	213
1604	I	784	INTEGER	214		214	212	213
1604	I	792	INTEGER	214		214	212	213
1604	I	800	INTEGER	214		214	212	213
1604	I	808	INTEGER	214		214	212	213
1604	I	816	INTEGER	214		214	212	213
1604	I	824	INTEGER	214		214	212	213
1604	I	832	INTEGER	214		214	212	213
1604	I	840	INTEGER	214		214	212	213
1604	I	848	INTEGER	214		214	212	213
1604	I	856	INTEGER	214		214	212	213
1604	I	864	INTEGER	214		214	212	213
1604	I	872	INTEGER	214		214	212	213
1604	I	880	INTEGER	214		214	212	213
1604	I	888	INTEGER	214		214	212	213
1604	I	896	INTEGER	214		214	212	213
1604	I	904	INTEGER	214		214	212	213
1604	I	912	INTEGER	214		214	212	213
1604	I	920	INTEGER	214		214	212	213
1604	I	928	INTEGER	214		214	212	213
1604	I	936	INTEGER	214		214	212	213
1604	I	944	INTEGER	214		214	212	213
1604	I	952	INTEGER	214		214	212	213
1604	I	960	INTEGER	214		214	212	213
1604	I	968	INTEGER	214		214	212	213
1604	I	976	INTEGER	214		214	212	213
1604	I	984	INTEGER	214		214	212	213
1604	I	992	INTEGER	214		214	212	213
1604	I	1000	INTEGER	214		214	212	213
1604	I	1008	INTEGER	214		214	212	213
1604	I	1016	INTEGER	214		214	212	213
1604	I	1024	INTEGER	214		214	212	213
1604	I	1032	INTEGER	214		214	212	213
1604	I	1040	INTEGER	214		214	212	213
1604	I	1048	INTEGER	214		214	212	213
1604	I	1056	INTEGER	214		214	212	213
1604	I	1064	INTEGER	214		214	212	213
1604	I	1072	INTEGER	214		214	212	213
1604	I	1080	INTEGER	214		214	212	213
1604	I	1088	INTEGER	214		214	212	213
1604	I	1096	INTEGER	214		214	212	213
1604	I	1104	INTEGER	214		214	212	213
1604	I	1112	INTEGER	214		214	212	213
1604	I	1120	INTEGER	214		214	212	213
1604	I	1128	INTEGER	214		214	212	213
1604	I	1136	INTEGER	214		214	212	213
1604	I	1144	INTEGER	214		214	212	213
1604	I	1152	INTEGER	214		214	212	213
1604	I	1160	INTEGER	214		214	212	213
1604	I	1168	INTEGER	214		214	212	213
1604	I	1176	INTEGER	214		214	212	213
1604	I	1184	INTEGER	214		214	212	213
1604	I	1192	INTEGER	214		214	212	213
1604	I	1200	INTEGER	214		214	212	213
1604	I	1208	INTEGER	214		214	212	213
1604	I	1216	INTEGER	214		214	212	213
1604	I	1224	INTEGER	214		214	212	213
1604	I	1232	INTEGER	214		214	212	213
1604	I	1240	INTEGER	214		214	212	213
1604	I	1248	INTEGER	214		214	212	213
1604	I	1256	INTEGER	214		214	212	213
1604	I	1264	INTEGER	214		214	212	213
1604	I	1272	INTEGER	214		214	212	213
1604	I	1280	INTEGER	214		214	212	213
1604	I	1288	INTEGER	214		214	212	213
1604	I	1296	INTEGER	214		214	212	213
1604	I	1304	INTEGER	214		214	212	213
1604	I	1312	INTEGER	214		214	212	213
1604	I	1320	INTEGER	214		214	212	213
1604	I	1328	INTEGER	214		214	212	213
1604	I	1336	INTEGER	214		214	212	213
1604	I	1344	INTEGER	214		214	212	213
1604	I	1352	INTEGER	214		214	212	213
1604	I	1360	INTEGER	214		214	212	213
1604	I	1368	INTEGER	214		214	212	

VARIABLES	SN	TYPE	RELOCATION
1621 LEARS	192	INTEGER	172
1617 L4	181	INTEGER	173
1606 L5	126	INTEGER	123
1622 M123X	59	INTEGER	56
1601 N	191	INTEGER	173
1653 NAME	43	INTEGER	DEFINED
0 MROWS	33	INTEGER	36
1602 NX	44	INTEGER	DEFINED
0 NYEARS	221	INTEGER	212
1628 NYEARY	152	INTEGER	146
1623 NYPI	161	INTEGER	161
1667 TITLE	75	REAL	183
FILE NAMES	84	MIXED	177
INPUT	56	MIXED	114
OUTPUT	226	FMT	106
TAPE6	60	FMT	117
VARIABLES USED AS FILE NAMES, SEE ABOVE	61	REFERENCES	127
EXTERNALS	1	TYPE	103
EOF	57	REAL	115
STATEMENT LABELS	DEF LINE	REFERENCES	124
1211 21	135	FMT	127
1216 22	136	FMT	127
1223 23	137	FMT	127
0 25	147	FMT	127
1366 26	179	FMT	127
1253 30	144	FMT	127
1257 31	145	FMT	127
675 40	225	FMT	127
1472 41	210	FMT	127
1517 42	215	FMT	127
1522 43	216	FMT	127
1525 44	217	FMT	127
0 47	231	INACTIVE	127
1552 52	222	FMT	127
1555 53	223	FMT	127
1568 54	224	FMT	127
1332 61	162	FMT	127
1335 62	163	FMT	127
1340 63	164	FMT	127
1343 64	165	FMT	127
1346 65	166	FMT	127
1351 66	167	FMT	127
1354 67	168	FMT	127
1357 55	169	FMT	127

STATEMENT LABELS	DEF LINE	REFERENCES
1425 71 FMT	194	182
1430 72 FMT	195	183
1433 73 FMT	196	184
1436 74 FMT	197	185
1441 75 FMT	198	186
1444 76 FMT	199	187
1447 77 FMT	200	188
1452 78 FMT	201	189
0 80	43	42
0 81	45	44
0 82	50	47
0 83	52	51
1232 137 FMT	139	138
1241 138 FMT	141	140
401 643	171	149
522 644	206	170
1031 1010 FMT NO REFS	90	
1060 1002 FMT NO REFS	90	
1077 1603 FMT NO REFS	105	
1115 1004 FMT NO REFS	113	
1005 1010 FMT NO REFS	62	
736 1011 FMT NO REFS	64	
1136 1026 FMT NO REFS	120	
714 1027 FMT NO REFS	54	
1461 1193 FMT	203	202
0 1492	39	38
757 1592 FMT NO REFS	73	
775 1593 FMT	76	75
1571 2000 FMT	233	60
620 2858	219	211
144 2593	72	77
0 3593	78	77
1266 6626 FMT	151	150
1276 6627 FMT	153	152
0 7005	230	227
1567 7006 FMT	229	229
1903 7029 FMT	90	79
0 8000	67	66
0 8001	86	85
0 8002	94	93
0 8003	101	100
0 8004	108	107
0 8005	116	115
1174 8017 FMT	131	130
0 8026	125	124
0 8027	58	57
127 9000	63	66
152 9001	81	85
164 9072	89	93
176 9013	97	100
220 9004	104	107
234 9005	112	115
246 9026	119	124
110 9027	53	57

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
20	1492	IXY	36 39	38	INSTACK
35	48	I1	42 43	28	INSTACK
46	81	I1	44 45	28	INSTACK
55	42	* I	47 50	178	NOT INNER
65	82	J	46 50	48	INSTACK
144	83	J	51 52	38	INSTACK
322	25	I	146 147	38	INSTACK
523	48	* I	206 225	1558	EXT REFS NOT INNER
526		* J	209 209	118	EXT REFS
547		* J	212 212	118	EXT REFS
566		* J	213 213	118	EXT REFS
565		* J	214 214	118	EXT REFS
625		* J	219 219	118	EXT REFS
644		* J	224 224	118	EXT REFS
663		* J	221 221	118	EXT REFS
731	7805	* IQ	227 230	58	EXT REFS

STATISTICS

PROGRAM LENGTH 17205 976
520008 CM USED

1 *DECK ADOL

C *****ARRAYS*****

C A(50,20) CONTAINS THE DATA TO BE OUTPUT.

C HEADM(50,8) CONTAINS THE HEADINGS FOR EACH ROW OF ARRAY A.

C IZZ(20) CONTAINS THE SPECIFICATION OF THE YEARS.

C *****ANDAYS*****

C *****VARIABLES*****

C NYEARS IS THE NUMBER OF YEARS OF INTEREST.

C NKOMS IS THE NUMBER OF ROWS IN ARRAY A WHICH CONTAIN COST INFORMATION.

C II IS A FORMAT INDEX. 1=F, 2=F, 3=L.

C IX IS A TABLE HEADING INDEX.

C 1=BASELINE YEAR DOLLARS.

C 2=THEN YEAR DOLLARS.

C 3=.... YEAR DOLLARS. (WHERE IS SPECIFIED.)

C IY IS THE VALUE OF THE YEAR INDICATED IN IX=3 ABOVE.

C IZ IS THE FIRST YEAR IN WHICH COSTS ARE INCURRED.

C IA IS A TABLE HEADING INDEX. 1=FISCAL YEARS, 2=CALENDAR YEARS.

C NX=NYEARS + 1

C N=NROWS + 1

C INUM IS THE NUMBER OF THE DEVICE ON WHICH THE OUTPUT IS PRINTED

C IFLAG IS AN INDEX DELINEATING WHETHER THE OUTPUT IS PRINTED OVER THE TERMINAL OR PLACED ON FILE.

C IABL DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.

C L4 DELINEATES WHETHER THE FIRST COLUMN IS TO BE TITLED "PREVIOUS COSTS".

C *****VARIABLES*****

C

C

C

C SUBROUTINE ADOL(A,NYEARS,COST)

C THIS ROUTINE ADDS ANY NUMBER OF SPECIFIED ROWS FROM THE COST ARRAY TO

C FORM A NEW ROW. ALL ELEMENTS OF THIS NEW ROW ARE THEN MULTIPLIED BY

```

C
C A SPECIFIED CONSTANT.
C
C/
C
SUBROUTINE ADDLIA(NYEARS,COST)
  DIMENSION A(50,20),IARR(50),COST(20)
  DATA IARR/15/
  CONTINUE
  4441 FORMAT* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*
  RETURN
  *DECK D1VDEL
END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 ADDL	63	66

VARIABLES	SN	TYPE	LOCATION
C A	REAL	ARRAY	F.P. 63
8 COST	REAL	ARRAY	REFS 64
6 IARR	INTEGER	ARRAY	REFS 65
17 IARR	INTEGER	*UNDEF	REFS 64
0 NYEARS	INTEGER	*UNDEF	F.P. 63

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	FMT NO REFS	67

STATISTICS

PROGRAM LENGTH	151E	65
523003 CH USED		


```

1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C
6      C A(50,20) CONTAINS THE COST DATA FOR THE ANALYSIS.
7      C
8      C COST(120) IS USED TO CALCULATE AND TRANSFER THE COST DATA FOR 1H
9      C ROW BEING CALCULATED.
10     C
11     C IARR(50) CONTAINS THE NUMBERS OF THE ROWS TO BE ADDED.
12     C
13     C *****ARRAYS*****
14     C
15     C *****VARIABLES*****
16     C
17     C NYEARS IS THE NUMBER OF YEARS OF INTEREST.
18     C
19     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
20     C
21     C IA IS THE NUMBER OF ROWS TO BE ADDED.
22     C
23     C FRAC IS THE FRACTION BY WHICH THE SUM OF THE ROWS IS TO BE MULTI
24     C
25     C *****VARIABLES*****
26     C
27     C/
28     C
29     C SUBROUTINE DIVDEL(A,NYEARS,COST)
30     C
31     C THIS ROUTINE ENABLES THE FORMULATION OF A ROW THROUGH THE DIVISION OF
32     C EXISTING ROW BY A SECOND EXISTING ROW.
33     C
34     C/
35     C
36     C SUBROUTINE DIVDEL(A,NYEARS,COST)
37     C DIMENSION A(50,20),COST(120)
38     C DATA IABC/18/
39     C CONTINUE
40     C 4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
41     C RETURN
42     C *DECK ELEMENT
43     C END

```

2 45

SYMBOLIC REFERENCE MAP (2=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 DIVDEL	37	42

VARIABLES	SN	TYPE	PELOCATION
0 A	REAL	AREAY	F.P.
U COST	REAL	AREAY	F.P.
		REFS	34 DEFINED
		REFS	39 DEFINED
			37
			37

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FTN 4.61446

SUBROUTINE DIVIDE 74/74 OPT=1

VARIABLES	SN	TYPE	PELOCATION
6 IABC	*	INTEGER	DEFINED
0 NYEARS		INTEGER	DEFINED
		*UNUSED	F.P.A.

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	FMY	NO REFS
		*1

STATISTICS	PROGRAM LENGTH	17E	15
	520908	CM	USED

```

1      C
      C/
      C
      C *****ARRAYS*****
5      C
      C      A(53,20) CONTAINS THE COST INFORMATION.
      C
      C      COST(20) TRANSFERS THE CALCULATED COST DATA.
10     C
      C *****ARRAYS*****
      C *****VARIABLES*****
      C
      C      NYEARS IS THE NUMBER OF YEARS OF INTEREST.
15     C
      C      IN IS THE NUMBER OF THE NUMERATOR ROW.
      C
      C      ID IS THE NUMBER OF THE DENOMINATOR ROW.
20     C
      C      IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
      C *****VARIABLES*****
      C
      C/
25     C
      C      SUBROUTINE ELEMENT(A)
      C
      C      THIS ROUTINE ENABLES A SPECIFIC ELEMENT OF THE COST ARRAY TO BE FORMED
      C
      C      BY SPECIFICATION OR BY DIVIDING A SPECIFIED ELEMENT OF THE COST ARRAY
      C
      C      BY ANOTHER SPECIFIED ELEMENT.
      C
      C/
35     C
      C      SUBROUTINE ELEMENT(A)
      C      DIMENSION A(50,20)
      C      DATA IABC/19/
      C
      C      99 CONTINUE
      C      1000 FORMAT(' IF THE ELEMENT IS TO BE FORMED BY SPECIFICATION ENTER 1',
      C      *//, ' IF BY DIVISION ENTER 2.*')
      C      READ*,IA
      C      IF(EOF(5)) 99,8099
      C      8055 CONTINUE
      C      WRITE(4,*)IA
      C      IF(IA.EQ.555) WRITE(6,2201)
      C      IF(IA.EQ.1)GO TO 35
      C
      C      9011 CONTINUE
      C      1001 FORMAT(' ENTER THE ROW AND COLUMN OF THE NUMERATOR ELEMENT*,*,* FO
      C      *LLOWED BY THE ROW AND COLUMN OF THE DENOMINATOR ELEMENT*,*,* FOLLO
      C      *WED BY THE ROW AND COLUMN OF THE ELEMENT TO BE CALCULATED*,*,* FOR
      C      * EXAMPLE 10,7,22,5,24,8*')
      C      READ*,IN,INC,IDR,IDC,ICR,ICC
      C      IF(EOF(5))9010,8000
      C
      C      8001 CONTINUE
      C      WRITE(4,*)IN,INC,INR,INDL,ICR,ICC
      C      A(ICR,ICC)=A(INR,INC)/A(INDL,IOU)

```


STATEMENT LABELS DEF LINE REFERENCES

72	1000	FMT NO REFS	40	
117	1001	FMT NO REFS	49	
179	1002	FMT NO REFS	59	
212	1003	FMT NO REFS	69	
234	2000	FMT	77	65
		INACTIVE	55	46
		INACTIVE	72	54
		INACTIVE	63	71
		INACTIVE	44	62
		INACTIVE	44	43
21	3000		44	54

STATISTICS

PROGRAM LENGTH	2556	173
520008 CM USED		

```

1      *DECK RINSERT
C
C/
C
5      C *****ARRAYS*****
C
C      A150(20) CONTAINS THE COST INFORMATION.
C
18     C *****AFRAYS*****
C
C      *****VARIABLES*****
C
C      IA DELINEATES HOW THE ELEMENT WILL BE FORMED.
C
15     C      INF,INC DELINEATE THE ROW AND COLUMN OF THE NUMERATOR ELEMENT
C      ,RESPECTIVELY.
C
C      IDE,IDO DELINEATE THE ROW AND COLUMN OF THE DENOMINATOR ELEMENT
C      RESPECTIVELY.
C
28     C      ICR,ICC DELINEATE THE ROW AND COLUMN OF THE ELEMENT TO BE CALLU
C      RESPECTIVELY.
C
C
25     C      ID DELINEATES WHETHER ANOTHER ELEMENT IS TO BE FORMED.
C      X IS THE SPECIFIED VALUE OF THE ELEMENT.
C
C      IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
36     C *****VARIABLES*****
C
C/
C
C      SUBROUTINE RINSERT(IA,NYEARS,X,ROWS,HEADW,PEOCH)
C
35     C THIS ROUTINE ENABLES THE INSERTION OF A ROW IN THE HEADING AND COST P2
C
C      INSERTION OF ROWS CAN BE REPEATED AS OFTEN AS DESIRED.
C
C/
C
C      SUBROUTINE RINSERT(IA,NYEARS,NROWS,HEADW,PEOCH)
C      DIMENSION HEADW(50,0),A150(20),COST(20)
C      INTEGER FROM(10,20)
C      DATA IABC/20/
C      CONTINUE
C      4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OM VERSION OF LAG-2.0)
C      RETURN
C      *DECK CUM
C      END
50

```

2 50

ENTRY POINTS DEF LINE REFERENCES
3 RINSERT 42 46

VARIABLES	SN	TYPE	RELOCATION	REFS	DEF
0 A	REAL	ARRAY	F.P.	43	DEFINED 42
16 COST	REAL	*UNDEF		43	
0 HEADM	REAL	ARRAY	F.P.	43	DEFINED 42
6 IABC	* INTEGER			45	
0 MBOWS	INTEGER	*UNUSED	F.P.	42	DEFINED
0 MYEARS	INTEGER	*UNUSED	F.P.	42	DEFINED
0 PROOH	INTEGER	ARRAY	F.P.	44	DEFINED 42

STATEMENT LABELS DEF LINE REFERENCES
7 4461 FMT NO REFS 47

STATISTICS
PROGRAM LENGTH 42E 34
520003 CM USED

```
1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C
6      C A(50,20) CONTAINS THE COST DATA.
7      C
8      C HEAD(50,3) CONTAINS THE COST ELEMENT HEADINGS.
9      C
10     C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
11     C
12     C COST(20) IS USED TO TRANSFER COST DATA.
13     C
14     C *****ARRAYS*****
15     C
16     C *****VARIABLES*****
17     C
18     C IS AND IL ARE THE 2 ROWS BETWEEN WHICH THE ROW IS BEING INSERTED
19     C IS IS LESS THAN IL.
20     C
21     C NPOMS IS THE NUMBER OF COST ELEMENTS. (ROWS)
22     C
23     C NYEARS IS THE NUMBER OF YEARS OF INTEREST.
24     C
25     C IX DELINEATES WHETHER ANOTHER ROW WILL BE INSERTED.
26     C
27     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
28     C
29     C N7 IS USED TO GUARD AGAINST INVALID INPUT INFORMATION.
30     C
31     C *****VARIABLES*****
32     C
33     C/
34     C
35     C SUBROUTINE CUM(COST,PRODM,NYEARS)
36     C
37     C THIS ROUTINE DETERMINES FIRST UNIT COST, GIVEN THE LEARNING RATE AND T
38     C
39     C TOTAL COST OF SPECIFIC ITEMS.
40     C
41     C/
42     C
43     C SUBROUTINE CUM(COST,PRODM,NYEARS)
44     C DIMENSION COST(20)
45     C INTEGER PRODM(10,20)
46     C DATA IABC/21/
47     C CONTINUE
48     C 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.2')
49     C RETURN
50     C *DECK ROMHCO
51     C END
```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES

3 CUM 43 49

VARIABLES SN TYPE RELOCATION

0	COST	REAL	ARRAY	F.P.	RLFS	44	DEFINED	43
6	IASC	INTEGER			DEFIN.D	46		
0	YEARS	INTEGER	*UNUSED	F.P.	DEFINED	43		
0	PROD	INTEGER	ARRAY	F.P.	REFS	45	DEFINED	43

STATEMENT LABELS DEF LINE REFERENCES

7 4441 FMT NO REFS 46

STATISTICS

PROGRAM LENGTH 178 15

52009 CM USED


```

1      C
2      C/
3      C
4      C *****ARRAYS*****
5      C COST(20) TRANSFERS THE CALCULATED COST INFORMATION.
6      C
7      C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
8      C
9      C *****ARRAYS*****
10     C *****VARIABLES*****
11     C
12     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
13     C
14     C SUM IS THE CUMULATIVE COST OF THE FIRST UNIT COST WERE ONE.
15     C
16     C CUMCOST IS THE CUMULATIVE COST OF THE GROUP OF UNITS.
17     C
18     C ITEST IS THE NUMBER OF THE FIRST PRODUCED UNIT OF THE GROUP.
19     C
20     C ISEC IS THE NUMBER OF THE LAST PRODUCED UNIT OF THE GROUP.
21     C
22     C RATE IS THE LEARNING RATE.
23     C
24     C T1 IS THE COST OF THE FIRST PRODUCED UNIT.
25     C
26     C *****VARIABLES*****
27     C
28     C
29     C SUBROUTINE ROMMOD(HEAD,A,PRODM,NYEARS,COST)
30     C
31     C THIS ROUTINE ENABLES THE MODIFICATION OF A ROW IN THE HEADING, COST OR
32     C PRODUCTION SCHEDULE. ARRAYS. ROW MODIFICATION CAN BE REPEATED AS OFTEN
33     C AS DESIRED.
34     C
35     C
36     C
37     C SUBROUTINE ROMMOD(HEAD,A,PRODM,NYEARS,COST)
38     C
39     C DIMENSION A(50,20),HEAD(50,6),COST(20)
40     C INTEGER PRODM(10,20)
41     C DATA IABC/17/
42     C CONTINUE
43     C **41 FORMAT(*) THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.**
44     C RETURN
45     C
46     C
47     C
48     C
49     C
50     C
51     C
52     C
53     C
54     C

```

ETN 4.6446 3-20/78 05.53.30

SUBROUTINE ROMMOD 7/74 QPI=1

ENTRY POINTS DEF LINE REFERENCES

3 ROMMOD 42 48

VARIABLES SN TYPE RELOCATION

0 A	REAL	ARRAY	F.P.	REFS	43	DEFINED	42
0 COST	REAL	ARRAY	F.P.	REFS	43	DEFINED	42
0 HEADW	REAL	ARRAY	F.P.	REFS	43	DEFINED	42
6 IABC	* INTEGER	*UNUSED	F.P.	DEFINED	45		
1 NYEARS	INTEGER	ARRAY	F.P.	DEFINED	42		
0 PRODM	INTEGER	ARRAY	F.P.	REFS	44	DEFINED	42

STATEMENT LABELS DEF LINE REFERENCES

7 4441 FMT NO REFS 47

STATISTICS

PROGRAM LENGTH 176 15

52003 CM USED

```
1      C
      C/
      C *****ARRAYS*****
      C
      C HEADM(50,20) CONTAINS THE HEADINGS FOR THE COST ARRAY.
      C
      C A(50,20) CONTAINS THE COST DATA.
      C
      C PRDUM(10,20) CONTAINS THE PRODUCTION SCHEDULE.
      C
      C COST(20) TRANSFERS THE COST INFORMATION.
      C
      C *****ARRAYS*****
      C
      C *****VARIABLES*****
      C
      C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
      C
      C IA IS AN INDEX DELINEATING THE ARRAY TO BE MODIFIED.
      C
      C IB IS THE NUMBER OF THE ROW TO BE MODIFIED.
      C
      C IC DELINEATES WHETHER ANOTHER ROW WILL BE MODIFIED.
      C
      C IF DELINEATES THE METHOD OF CALCULATION FOR A ROW IN THE COST A
      C
      C *****VARIABLES*****
      C
      C/
      C
      C SUBROUTINE APRINT(YEARS,NROWS,A,HEADM,PRDUM)
      C
      C THIS ROUTINE OUTPUTS WHAT IS PRESENTLY IN THE HEADING, COST OR PRODUCT
      C SCHEDULE ARRAYS.
      C
      C/
      C
      C SUBROUTINE APRINT(YEARS,NROWS,A,HEADM,PRDUM)
      C DIMENSION A(50,20),HEADM(50,8)
      C INTEGER PRDUM(10,20)
      C DATA IABC/22/
      C
      C 37 CONTINUE
      C 1801 FORMAT(0 TO OUTPUT THE COST ARRAY ENTER 1, THE HEADING ARRAY 2, TH
      C 02,/,0 PRODUCTION SCHEDULE ARRAY 3 OR IF NO ARRAY ENTER 4,0)
      C READ*,IA
      C IF IEQ(IE1) 17,0007
      C
      C 8007 CONTINUE
      C
      C WRITE(6,*)IA
      C IF (IA.EQ.555) WRITE(6,2000)
      C IF (IA.EQ.210) TO 25
      C IF (IA.EQ.310) TO 35
      C IF (IA.EQ.41) RETURN
      C
      C PRINT 109
      C 119 FORMAT(1," THE COST ARRAY.")
      C DO 110 I=1,NROWS
```


STATEMENT LABELS		DEF LINE	REFERENCES		
15	97	44	40	60	76
165	109	56	55		
0	110	60	57		
177	111	59	54		
205	209	63	62		
0	210	67	64		
217	211	66	65		
225	309	71	70		
0	310	75	72		
241	111	74	73		
132	100	45			
244	200	74	51		
0	8097	49	48		

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
37	110	* I	57 60	208	EXT REFS NOT INNER
42		* J	58 59	118	EXT REFS
62	210	* I	54 67	208	EXT REFS NOT INNER
65		* J	65 65	118	EXT REFS
107	110	* I	72 75	218	EXT REFS NOT INNER
112		* J	73 73	118	EXT REFS

STATISTICS

PROGRAM LENGTH	2728	136
50009 CM USED		

```

1  *DECK GCS
C
C/
C
5  C *****ARRAYS*****
C
C  A(50,20) CONTAINS THE COST INFORMATION.
C  HADM(50,3) CONTAINS THE HEADINGS FOR THE COST ELEMENTS. (RONE)
10 C  PROD(10,20) CONTAINS THE PRODUCTION SCHEDULES.
C
C *****ARRAYS*****
C *****VARIABLES*****
C
C  IA DELINEATES THE ARRAY TO BE OUTPUT.
C  IC IS THE NUMBER OF PRODUCTION SCHEDULES.
20 C
C  IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C *****VARIABLES*****
25 C
C/
C
C  SUBROUTINE GCS(IN).
C
C  THIS SUBROUTINE MAKES DIRECT TRANSFER FROM ANY INTEGER RESPONSE
C  LOCATION IN THE MAIN ROUTINE TO 15 DESIGNATED LOCATIONS IN THE MAIN ROUTINE.
C/
35 C
C  SUBROUTINE GCS(IN).
C  KCTYKNS (L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,L16)
C  DATA IABC/23/
C  IF (N.EQ.1058) RETURN L1
C  IF (N.EQ.1400) RETURN L2
C  IF (N.EQ.1471) RETURN L3
C  IF (N.EQ.1482) RETURN L4
C  IF (N.EQ.1483) RETURN L5
C  IF (N.EQ.1484) RETURN L6
C  IF (N.EQ.1485) RETURN L7
C  IF (N.EQ.1486) RETURN L8
C  IF (N.EQ.1077) RETURN L9
C  IF (N.EQ.1407) RETURN L10
C  IF (N.EQ.1408) RETURN L11
C  IF (N.EQ.1472) RETURN L12
C  IF (N.EQ.1409) RETURN L13
C  IF (N.EQ.1410) RETURN L14
C  IF (N.EQ.1411) RETURN L15
C  IF (N.EQ.1425) RETURN L16
C  IF (N.EQ.2000) GO TO 17
C  CONTINUE
55
1000 FORMAT(*) THE FOLLOWING IS APPLICABLE TO THE MAIN ROUTINE ONLY.

```



```

CONTINUE
1331 FORMAT( IF IN RESPONSE TO AN INTEGER REQUEST 1000 PLUS ONE OF CER
*AIN SPECIFIED STATEMENT*,//, * NUMBERS IS INPUT THEN THE USER IS BE
*NT DIRECTLY TO THAT STATEMENT NUMBER*,//, * THUS, FOR EXAMPLE, A RE
*SPONSE OF 1000 WOULD SEND THE USER TO STATEMENT 66 WHICH REQUESTS
*THE NUMBER OF YEARS OF INTEREST*,//, * THIS IS APPLICABLE FOR THE
* FOLLOWING STATEMENT NUMBERS WHOSE REQUESTS END IN THE SYMBOL *.*)
CONTINUE
1511 FORMAT( STATEMENT NUMBER
REQUESTS*)
CONTINUE
1231 FORMAT( 35 YEARS SPECIFICATION*,//,
ROWS SPECIFICATION*,//,
** 401 INPUT FILES*,//,
** 402 ROW MODIFICATION*,//,
** 403 ELEMENT MODIFICATION*,//,
** 404 ROW INSERTION*,//,
** 405 PRODUCTION SCHEDULE*,//,
** 406 HEADING ARRAY SPECIFICATION*,//,
** 77 CALCULATIONS*,//,
** 407 SPREADING THE DATA*,//,
** 408 ALLOWING FOR INFLATION*,//,
** 409 OUTPUT*,//,
** 409 ARRAY CHECK*,//,
** 410 STORE FILES*,//,
** 411 TERMINATE*,//,
** 425 COLUMN INSERT*)
17 RETURN
*DECK INTRP
END

```

2 60

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES

VARIABLES	SN	TYPL	FFLOCATION
119 IABC	36	INTEGER	UFFINLU
1 L1	36	REFURNS	REFS
0 L10	48	REFURNS	REFS
0 L11	49	REFURNS	REFS
0 L12	50	REFURNS	REFS
0 L13	51	REFURNS	REFS
0 L14	52	REFURNS	REFS
0 L15	53	REFURNS	REFS
0 L16	54	REFURNS	REFS
0 L2	41	REFURNS	REFS
0 L3	41	REFURNS	REFS
0 L4	42	REFURNS	REFS
0 L5	43	REFURNS	REFS
0 L6	44	REFURNS	REFS
0 L7	45	REFURNS	REFS
0 L8	46	REFURNS	REFS
0 L9	47	REFURNS	REFS

VARIABLES	SN	TYPE	RELOCATION	F.P.	REFS						
0 N		INTEGER									
					33	47	40	41	42	43	44
					46	55	48	49	50	51	52
					54		DEFINED	36			45
											53

STATEMENT LABELS

DEF LINE	REFERENCES
117 17	44 55
111 1000	FMT NO REFS 57
126 1001	FMT NO REFS 59
171 1010	FMT NO REFS 66
200 1200	FMT NO REFS 6A

STATISTICS

PROGRAM LENGTH	2608	176
526008 CM USLO		

```
1 C
C/
C *****AFRAYS*****
5 C
C NONE
C *****ARRAYS*****
10 C *****VARIABLES*****
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C N DELINEATES THE RETURN LOCATION IN THE MAIN ROUTINE.
15 C *****VARIABLES*****
C/
20 C
C SUBROUTINE T1SL(COST,PROD,M,NYEARS)
C GIVEN THE COST OF TWO SPECIFIC GROUPS OF ITEMS THEN THIS ROUTINE CALCU
C THE FIRST UNIT COST AND THE LEARNING RATE.
25 C/
SUBROUTINE T1SL(COST,PROD,M,NYEARS)
DIMENSION COST(24)
INTEGER PROD(10,20)
DATA IABC/25/
CONTINUE
4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
RETURN
*DECK CINSERT
END
```

2 62

SYMBOLIC REFERENCE MAP (R#2)

ENTRY POINTS	DEF LINE	REFERENCES			
3 T1SL	28	34			
VARIABLES	SN	TYPE	RELOCATION	DEF LINE	REFERENCES
C COST		REAL	F.P.		
6 IABC	*	INTEGER			
8 YEARS		INTEGER	UNUSED	24	31
U PROD		INTEGER	ARRAY	30	30

STATISTICS

PROGRAM LENGTH 178 15
52886 CM USED

```

1      C
2      C/
3      C *****ARRAYS*****
4      C
5      C COST(20) STORES AND TRANSFERS THE COST INFORMATION.
6      C
7      C PRODM(10,20) STORES THE PRODUCTION SCHEDULES FOR ALL EQUIPMENTS
8      C
9      C *****ARRAYS*****
10     C
11     C *****VARIABLES*****
12     C
13     C J1 AND J2 ARE THE FIRST AND LAST UNITS OF GROUP 1.
14     C
15     C J3 AND J4 ARE THE FIRST AND LAST UNITS OF GROUP 2.
16     C
17     C U1 AND P1 ARE 2 NUMBERS WHOSE PRODUCT EQUALS THE COST OF THE
18     C      GROUP 1 UNITS.
19     C
20     C U2 AND P2 ARE 2 NUMBERS WHOSE PRODUCT EQUALS THE COST OF THE
21     C      GROUP 2 UNITS.
22     C
23     C S1 IS THE TOTAL COST OF GROUP 1 UNITS.
24     C
25     C S2 IS THE TOTAL COST OF GROUP 2 UNITS.
26     C
27     C C IS THE RATIO OF THE COSTS: S1/S2.
28     C
29     C X IS THE TRIAL LEARNING RATE.
30     C
31     C E IS THE TRIAL EXPONENT.
32     C
33     C SUM1 AND SUM2 ARE TRIAL COSTS FOR GROUP 1 AND GROUP 2.
34     C
35     C G IS THE RATIO OF THE TRIAL COSTS.
36     C
37     C ABC HAS A FINAL VALUE EQUAL TO THE ESTIMATE OF THE LEARNING RATE
38     C
39     C T1 IS THE ESTIMATE OF THE FIRST UNIT COST.
40     C
41     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
42     C
43     C *****VARIABLES*****
44     C
45     C/
46     C
47     C SUBROUTINE CINSERT(A,NYEARS)
48     C
49     C THIS ROUTINE ENABLES THE INSERTION OF A COLUMN IN THE COST ARRAY.
50     C
51     C/
52     C SUBROUTINE CINSERT(A,NYEARS)
53     C DIMENSION A(50,20)
54     C DATA IABC/26/
55     C CONTINUE
56     C FORMAT(0 THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.0)

```

2 64

RETURN
END

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES
3 CINSRT 33 53

VARIABLES	SM	TYPE	RELOCATION	DEF	LINE	REFERENCES
0 A	REAL	ARRAY	F.P.	34	DEFINED	53
6 IABC	INTEGER	UNUSED	F.P.	55	DEFINED	53
8 NYEAS	INTEGER	UNUSED	F.P.	53	DEFINED	53

STATEMENT LABELS DEF LINE REFERENCES
7 4441 FMT NO REFS 57

STATISTICS
PROGRAM LENGTH 178 15
529038 CM USED

1 *DECK NAMCHK

C

C/

5 C *****ARRAYS*****

C IEM(5) CONTAINS EMPCR MESSAGE INFORMATION RESULTING FROM
A CALL TO SYSTEM ROUTINE PFSUB.

C A(5L,20) CONTAINS THE COST DATA.

C HEALM(52,8) CONTAINS THE HEADING FOR THE COST DATA.

C PRODM(1L,20) CONTAINS THE PRODUCTION SCHEDULES.

15 C *****ARRAYS*****

C *****VARIABLES*****

C *****VARIABLES*****

C IES,UCM,UN,PM,CT, AND M ARE VARIABLES USED BY SYSTEM ROUTINE
PFSUB.

C I19 IS AN INDEX DELINEATING WHETHER DATA WILL BE INPUT ARE
SAVED.

C I1,IB,IC ARE INDICES INDICATING WHETHER HEADING, COST AND/OR
PRODUCTION SCHEDULE INFORMATION WILL BE INPUT.

C J1,JB,JC ARE INDICES INDICATING WHETHER HEADING, COST AND/OR
PRODUCTION SCHEDULE INFORMATION WILL BE SAVED.

C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.

C SUB TAKES ON A FILE NAME.

35 C *****VARIABLES*****

C *****VARIABLES*****

C SUBROUTINE NAMCHK(SUB)

C THIS ROUTINE CHECKS THAT THE INPUT FILE NAME WILL NOT CAUSE PROBLEM

C TERMINATION.

C

C SUBROUTINE NAMCHK(SUB)

C DIMENSION SNAH(9)

C INTEGER SUB

C DATA SYM/1H*,BLANK/1H /

5 READ(5,1) SUB

C WRITE(6,10) SUB

10 FORMAT(A10)

C IF(SUB.NE.BLANK)GO TO 75

20 CONTINUE

25 FORMAT(THE NAME YOU CHOOSE DID NOT MEET THE REQUIREMENTS

OF LENGTH/OR TYPE OF CHARACTER,I.E. ALPHA.)

SUBROUTINE NAMCHK Z6/76 OPT=1

60 75 13J GO TO 5
DECODE(7,100,SNAM(I),I=2,6)
FORMAT(9A1)
SNAM(I)=SYM
IF (SNAM(2).LT.1MA.OR.SNAM(2).G.1HZ)GC TO 20
DO 200 I=2,6

IF(SNAM(I).EQ.BLANK)GO TO 256
230 CONTINUE

```

70      END
      RETURN
      ENCODE(I,100,SUBJ(SNAME(J),J=1,I)
250      SNAME(I)=SYM
      I=3

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES	RELOCATION		VARIABLES		SN	TYPE
3	47	59						
44	BLANK		54	64	50	2*65		
113	I		51	67				
	INTEGER							
114	J		65	65				
	INTEGER							
115	SNAM	ARRAY	45	2*62	66			
	REAL							
0	SUB	F.P.	49	52	59			
	INTEGER							
43	SYM		61	67	50			
	REAL							

STATEMENT LABELS	DEF LINE	REFERENCES
5 5	51	58
56 10	53	51
14 28	55	62
60 25	56	
15 75	53	54
101 101	60	59
3 203	65	63
33 250	67	64

STATISTICS

PROGRAM	LENGTH	1268	86
520008	CY US:0		

```

1      *DECK MULT
      C
      C/
      C *****ARRAYS*****
      C
      C A(50,20) CONTAINS THE COST DATA.
      C
      C HEADM(50,6) CONTAINS THE HEADINGS FOR THE COST DATA.
      C
      C PHODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
      C
      C IEM(5) CONTAINS ERROR MESSAGE INFORMATION RESULTING FROM A CALL
      C TO SYSTEM ROUTINE PESUEA
      C
      C *****ARRAYS*****
      C *****VARIABLES*****
      C
      C IEM,U,M,UN,PM,CT, AND M ARE VARIABLES USED BY SYSTEM ROUTINE FF
      C
      C TABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
      C
      C SUB TAKES ON A FILE NAME.
      C
      C KK IS AN INDEX USED TO CONTROL THE ROUTINE. IT ASSURES THAT AL
      C 3 FILES ARE TRANSFERRED TO THE ARRAYS AND THAT A RETURN IS
      C
      C *****VARIABLES*****
      C
      C/
      C
      C SUBROUTINE MULT(A,COST,NYEARS)
      C
      C THIS ROUTINE FORMS A ROW IN THE COST ARRAY BY OBTAINING THE
      C PRODUCT OF TWO EXISTING ROWS.
      C
      C/
      C SUBROUTINE MULT(A,COST,NYEARS)
      C DIMENSION A(50,20),COST(20)
      C DATA TABC/30/
      C CONTINUE
      C 4000 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE')
      C RETURN
      C *DECK FILES
      C END

```

2 68

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES
1 MULT	40	45

VARIABLES		SN	TYPE	RELOCATION		REFS		DEFINED	
0	A		REAL	ARRAY	F.P.	41	DEFINED	40	
0	COST		REAL	ARRAY	F.P.	41	DEFINED	40	
6	IABC	*	INTEGER			42	DEFINED		
0	MYEARS		INTEGER	*UNUSED	F.P.	40	DEFINED		

STATEMENT LABELS		DEF LINE	REFERENCES
7	4000	FMT NO REFS	44

STATISTICS	
PROGRAM LENGTH	178 15
520008 CM USED	

2 70

```

1      C/
C *****ARRAYS*****
5      C
C      A(50,20) CONTAINS THE DATA TO BE OUTPUT.
C
C      HEADM(50,6) CONTAINS THE HEADINGS FOR EACH ROW OF ARRAY A.
C
C      IZZ(20) CONTAINS THE SPECIFICATION OF THE YEARS.
10     C *****ARRAYS*****
C *****VARIABLES*****
C *****VARIABLES*****
15     C
C      NYEARS IS THE NUMBER OF YEARS OF INTEREST.
C
C      NROWS IS THE NUMBER OF ROWS IN ARRAY A WHICH CONTAIN COST
C      INFORMATION.
20     C
C      II IS A FORMAT INDEX. 1=1, 2=2, 3=3.
C
C      IX IS A TABLE HEADING INDEX.
C      1=BASELINE YEAR DOLLARS.
C      2=1970 YEAR DOLLARS.
C      3=.... YEAR DOLLARS. (WHERE .... IS SPECIFIED.)
25     C
C      IX IS THE VALUE OF THE YEAR INDICATED IN IX=3 ABOVE.
C
C      IZ IS THE FIRST YEAR IN WHICH COSTS ARE INCURRED.
30     C
C      IA IS A TABLE HEADING INDEX. 1=FISCAL YEARS, 2=CAL=NDAR YEARS.
C
C      HX=NYFARS + 1
C      N=NEGWS + 1
35     C
C      INUM IS THE NUMBER OF THE DEVICE ON WHICH THE OUTPUT IS PRINTED
C
C      IFLAG IS AN INDEX DELINEATING WHETHER THE OUTPUT IS PRINTED OVER
C      THE TERMINAL OR PLACED ON FILE.
40     C
C      IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C      LA DELINEATES WHETHER THE FIRST COLUMN IS TO BE TITLED "PREVIOUS
C      COSTS".
45     C *****VARIABLES*****
C *****VARIABLES*****
50     C/
C
C      SUBROUTINE FILES(A,HEADM,PRODM,I19)
C
C      THIS ROUTINE ENABLES DATA STORED ON FILES TO BE INPUT TO THE COST,
C
C      HEADING AND PRODUCTION SCHEDULE ARRAYS DURING PROGRAM OPERATION. ALSO
C
C      INFORMATION STORED IN THESE ARRAYS CAN BE PLACED ON FILES DURING

```

C PROGRAM OPERATION.

60

C

C

C

SUBROUTINE FILES(A,HEADM,PRODUM,I19)

DIMENSION A(50,20),HEADM(50,8)

INTEGER PRODUM(10,20),IENIS(1),SUE

DATA IABC/16/

IF(I19.EQ.2160 TO 22

9006 CONTINUE

1100

FORMAT(*) ENTER 1 IF YOU WISH TO SPECIFY, BY FILE, THE HEADING,COST

AND/OR PRODUCTION ARRAYS,,*,* RESPECTIVELY, OTHERWISE ENTER 2*,*

*A TYPICAL RESPONSE WOULD BE 1,2,10)

READ*,1A,I8,1C

IF(EOF(5))1900,1000

1000 CONTINUE

WRITE(6,*)1A,I8,1C

IF(1A.NE.1)60 TO 201

2 CONTINUE

1001 FORMAT(*) SPECIFY THE FILE TO BE READ INTO THE HEADING ARRAY,*)

CALL NANCHK(SUB)

1002

FORMAT(8,10)

CALL RETURN(SHTAPE1)

1003

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

41 CONTINUE

CALL RETURN(SHTAPE1)

1004

FORMAT(8,10)

CALL RETURN(SHTAPE1)

1005

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1006

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1007

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1008

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1009

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1010

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)

1011

IF(1A.NE.1)60 TO 201

CALL RETURN(SHTAPE1)


```

115      READ*,JA,JB,JC
      IF (EOF(1)) 122,8022
122      CONTINUE
      WRITE(4,*)JA,JB,JC
      IF (JA.NE.1) GO TO 202
120      CONTINUE
1005      FORMAT(1) INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
      *YOUR HEADING ARRAY,---A UNIQUE FILE NAME.*
      CALL NAMCHK(SUB)
      CALL RETURN(SHTAPE2)
125      CALL REQUEST(SHTAPE2,3H*PF)
      GO 141,1=1,5
141      WRITE(6,157) (HEADW(I,J),J=1,8)
157      FORMAT(10)
141      CONTINUE
141      ENDFILE 8
      ERK=0.6
      CALL PERMFILE(R,ZHCATALOG,SHTAPE2,SUB,2HXY,1)
      IF (ERR.NE.0.0) GO TO 22
      CALL RETURN(SHTAPE2)
135      202      IF (JB.NE.1) GO TO 302
      7      CONTINUE
1006      FORMAT(1) INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
      *YOUR COST ARRAY,---A UNIQUE FILE NAME.*
      CALL NAMCHK(SUB)
      CALL RETURN(SHTAPE2)
140      CALL REQUEST(SHTAPE2,3H*PF)
      WRITE(2,*)((ALL,I),I=1,5),J=1,20)
      ENDFILE 2
      ERK=0.0
145      CALL PERMFILE(R,ZHCATALOG,SHTAPE2,SUB,2HXY,1)
      IF (ERR.NE.0.0) GO TO 7
      CALL RETURN(SHTAPE2)
      302      IF (JC.NE.1) RETURN
      8      CONTINUE
1407      FORMAT(1) INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/
      *YOUR PRODUCTION ARRAY,---A UNIQUE FILE NAME.*
      CALL NAMCHK(SUB)
      CALL RETURN(SHTAPE2)
      CALL REQUEST(SHTAPE2,3H*PF)
155      WRITE(2,*)((PROD(I,J),I=1,10),J=1,20)
      ENDFILE 2
      ERK=0.3
      CALL PERMFILE(R,ZHCATALOG,SHTAPE2,SUB,2HXY,1)
      IF (ERR.NE.0.0) GO TO 8
160      CALL RETURN(SHTAPE2)
      RETURN
      ENUL

```

SYMBOLIC REFERENCE MAP (3+2)

STATEMENT LABELS DEF LINE REFERENCES

77	301		100	90
286	302		100	135
352	1000	FMT NO REFS	69	
407	1001	FMT MC REFS	78	
431	1002	FMT NO REFS	92	
444	1003	FMT NO REFS	102	
460	1004	FMT NO REFS	112	
514	1005	FMT MC REFS	121	
540	1006	FMT NO REFS	137	
557	1007	FMT MC REFS	150	
0	0000	INACTIVE	74	73
0	0022	INACTIVE	117	116
17	9000		68	73

LOOPS LABEL INDEX FROM-TO LENGTH PROPERTIES

LOOPS LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
40	41	85 88	208	EXT REFS NOT INNER
43	J	86 86	118	EXT REFS
135	J	126 129	208	EXT REFS NOT INNER
140	J	127 127	118	EXT REFS

STATISTICS

PROGRAM LENGTH	7408	480
520608 CM USED		

LOAD MAP - EAGLE2
OVERLAY(FLIER,0,0)

CYBER LOADER 1.3-446

9-20/76 J3.03.35.

PAGE 1

----- OVERLAY(FLIER,0,0)

FMA OF THE LOAD 111
FMA+1 OF THE LOAD 41434

TRANSFER ADDRESS -- EAGLE2 5775

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSR	VER	LEVEL	HARDWARE	COMMENTS
EAGLE2	111	14726	LGO	04/20/78	FTN	4.5	446	665X I	PROGRAM OPT=1
CAL1	15037	70	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CAL3	15127	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CAL2	15146	114	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CAL4	15262	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
MAPCON	15301	110	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
SPREAD	15411	14	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CAL	15425	43	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ESCALAT	15476	1277	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
NEWRA	16767	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CAL5	17006	43	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
PROGUC	17051	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
OUT	17076	1720	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ADDL	21011	101	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
DIVIDEI	21111	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ELEMENT	21130	255	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ALNSERT	21405	42	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CUM	21447	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ROMMOD	21466	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
APPRINT	21505	272	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
ACS	21777	268	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
T1SL	22257	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
CINSERT	22276	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
NA4CHK	22315	125	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
MULT	22443	17	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
FILES	22462	740	LGO	04/20/78	FTN	4.5	446	665X I	SUBROUTINEOPT=1
DEMETL	23422	1054	UL-S	04/20/77	COMPASS	3	2-414	665X I	FERMFILE FUNCTION SUBROUTINE
RETURN	24476	70	UL-S	04/20/77	COMPASS	3	2-414	665X I	FTN-CALLABLE FILE RETURN/UNLOAD
REQUEST	24566	472	UL-S	04/20/77	COMPASS	3	2-414	665X I	FTN-CALLABLE EQUIPMENT REQUEST PROCESSOR
/STP.END/	25261	1							
FECL.C./	25304	23							
/O9.10./	25304	133							
QANIRV	25437	0	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		FOR INITIALIZATION ROUTINE.
CONIO=	25437	64	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		COMMON CODED I/O ROUTINES AND CONSTANTS.
DECODE=	25523	73	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		FORMATTED READ FROM COF..
ENDFIL=	25616	61	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		WRITE END OF LOGICAL FILE MARK.
FECMSK=	25677	41	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		INITIALIZE CONSTANTS.
FLYOUT=	25740	311	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		COMMON FLOATING OUTPUT CODE
FORSYS=	26251	604	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		FORTRAN OBJECT LIBRARY UTILITIES.
INCOM=	27355	276	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		COMMON INPUT FORMATTING CODE
IMPC=	27353	160	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		FORMATTED READ FROM RECORD.
KPAKER=	27533	406	SL-FORTIRAN	07/27/77	COMPASS	3	4-446		PROCESS FORMATTED FORTRAN INPUT.

22

LOAD MAP - EAGLE2
OVERLAY(FLIER,0,0)

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSOR VER	LEVEL	HARDWARE	COMMENTS
LDIN=	30141	260	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LIST DIRECTED INPUT FORMATTING
OUTCON=	30421	154	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	COMMON OUTPUT CODE
ENCODE=	30575	123	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	FORMATTED WRITE INTO CORE.
EOF	30720	16	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	TEST FOR END OF FILE STATUS.
FLIN=	30736	156	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	COMMON FLOATING INPUT CONVERTER.
FMATP=	31114	353	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	CRACK APLIST AND FORMAT FOR KODER/KRAKER.
GETUTL=	31467	16	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	FCL MISC UTILITIES.
GETFIT=	31505	42	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LOCATE A FIT GIVEN A FILE NAME.
INPE=	31547	231	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LIST DIRECTED INPUT CONTROL
KODER=	31750	456	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	OUTPUT FORMAT INTERPRETER.
LDOUT=	32426	241	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LIST DIRECTED OUTPUT FORMATTING
OUTC=	32667	172	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	FORMATTED WRITE FORTRAN RECORD.
OUTF=	33061	163	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LIST DIRECTED OUTPUT CONTROL
SYSID=	33244	1	SL-FORTRAN	07/27/77	COMPASS	3.	4-446	LINK BETWEEN SYS=AID AND INITIALIZATION CODE.
/CON.RM/	33245	6						
CIO.RM	33253	40	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/A08.RM/	33313	10						
MOVE.RM	33323	66	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
MCI.RM	33411	233	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/JMS.RM/	33644	11						
/ZHEHC.RM/	33655	3						
/OPES.FO/	33660	1						
/OPEN.FO/	33661	7						
OPEN.PH	33670	237	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/TEH.RM/	34127	1						
/PUT.FO/	34130	7						
PUI.SQ	34137	1411	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
WAR.SQ	35550	260	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/CLSF.FO/	36030	7						
CLSF.RM	36037	22	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/GEI.BT/	36061	5						
BT.T.SQ	36066	115	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
MEOX.SQ	36203	150	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/SKFL.FO/	36353	7						
SKFL.SQ	36362	51	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
SYS.RM	36433	49	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
ERR.RM	36473	406	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
CHWR.SC	37101	7	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
OSUB.RM	37110	71	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
OPEN.SQ	37201	257	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
OPEX.SQ	37460	14	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/PUT.T/	37474	11						
ALEQ.RP	37505	43	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
CLSF.SQ	37550	134	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/CLSW.FO/	37204	7						
CLSV.SC	37713	137	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/REM.FO/	40352	7						
REM.SQ	40061	42	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
/GEI.FO/	40123	7						
/RPAR.XX/	40132	1						
/GEI.BT/	40133	11						
GET.SQ	40144	1062	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
7.SQ	41226	101	SL-SYSIO	07/27/77	COMPASS	3.	4-446	
FSU.SQ	41327	105	SL-SYSIO	07/27/77	COMPASS	3.	4-446	

PROCESS SYSTEM REQUEST.

LOAD MAP - EAGLE2
OVERLAY(FLIER,0,0)

CYBER LOADER 1.3-4-6

04/24/79 09.03.35.

PAGE 3

1.271 CP SECONDS

613008 CM STORAGE USED

113 T/9LE MOVES

2 77

CSA NOS/BE 14540 EGS 14540-CMF1 02/16/70

00.50.21.ZA3AD31 FROM /AD
 00.50.21.1P 0000192 WORDS - FILE INEUT , DC 04
 00.50.21.7A0.125.1010J,CM100000. A750567,KOVACS,
 00.50.21.1TYPE,56211
 00.50.25.REMOTE JOB - - NO CARDS WITH THIS DECK P
 00.50.25.UT IN BIN-YM
 00.50.25.ATTACH,GHOST2.
 00.50.25.PEN IS
 00.50.25.GHOST2
 00.50.25.PF CYCLE NO. = 012
 00.50.30.FTN,1=GHOST2,R=2.
 00.01.52. 6.015 CP SECONDS COMPILATION TIME
 00.01.52.ATTACH,S,MCSLIB,10=X654321.
 00.01.52.PF CYCLE NO. = 001
 00.01.52.LIBRARY,S.
 00.01.52.REQUEST,FLIER,*PF.
 00.01.54.MAP,PART.
 00.01.55.LOAD,LGO.
 00.01.55.NOGO.
 00.01.35.CATALOG,FLIER,QUICK2,PP=399.
 00.01.37.INITIAL CATALOG
 00.01.37.CT 10= A750567 PEN=QUICK2
 00.01.37.CT CY= 001 00017152 WORDS.
 00.01.38.0P 00022728 WORDS - FILE OUTPUT , DC 48
 00.01.38.MS 43000 WORDS (50176 MAX USED)
 00.01.38.SCM 66000 WORDS MAXIMUM
 00.01.38.CPA 7.439 SEC. 3.229 ADJ.
 00.01.38.10 44.661 SEC. 22.343 ADJ.
 00.01.38.CH 1009.056 KMS. 9.000 ADJ.
 00.01.38.CRUS 33.654
 00.01.38.COST 2.61
 00.01.38.PP 69.633 SEC. \$ DATE 06/26/70
 00.01.38.EJ END OF JOB, AD A750567.

***** Z08AD31 //// END OF LIST ////
 ***** Z08AD31 //// END OF LIST ////

QUICK3

PROGRAM EAGLE3 74/74 OPT=1

FTN 4.6+46J

J4/19/76 20.33.20

PAGE

1

```

1  C/
   *DECK EAGLE3
   *OVERLAY(FLIEF,0.0)
5  C
   C
   C MAIN
10 C
   C THIS ROUTINE ENABLES THE USER TO CONTROL THE PROGRAM AND PROVIDES AN
   C INTERFACE WITH OTHER ROUTINES.
   C
15 C
   PROGRAM EAGLE3(INPUT=5138,OUTPUT=5138,TAPE5=INPUT,TAPE6=OUTPUT,
   *TAPE1=5138,TAPE2=5138,TAPE3=5138,TAPE4=5138,TAPE7=5138,
   DIMENSION HEADW(50,8),A(50,20),B(50,20)
   INTEGER PROOM(10,20)
   DATA IABC/7/
20 9000 CONTINUE
   1000 FORMAT(' THIS IS EAGLE3. A USER'S MANUAL EXISTS. ENTER 1 TO CONT
   1INUE. ')
   C
   C
25 READ*,IA
   IF(EOF(5)) 9808,8000
   8000 CONTINUE
   WRITE(6,*)IA
   IF(IA.EQ.555) WRITE(6,2000)
30 80 CONTINUE
   1002 FORMAT(' ENTER THE NUMBER OF YEARS OVER WHICH COST DATA WILL BE GE
   *NERATED. ')
   READ*,NYEARS
   IF(EOF(5)) 80,8000
35 8000 CONTINUE
   WRITE(6,*)NYEARS
   IF(NYEARS.GT.1000)CALL GCS(NYEARS),
   XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
   *425)
   IF(NYEARS.EQ.555) WRITE(6,2000)
40 400 CONTINUE
   1003 FORMAT(' ENTER THE NUMBER OF COST ELEMENTS IN THE OUTPUT ARRAY. ')
   READ*,NPOWS
   IF(EOF(5)) 400,8400
45 8400 CONTINUE
   WRITE(6,*)NPOWS
   IF(NPOWS.GT.1000)CALL GCS(NPOWS),
   XRETURNS(188,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
   *425)
   IF(NPOWS.EQ.555) WRITE(6,2000)
50 401 CONTINUE
   1050 FORMAT(' IF YOU HAVE EXISTING FILES TO INPUT TO ARRAYS ENTER 1,
   * OTHERWISE ENTER 2. ')
   READ*,IFI
55 IF(EOF(5)) 401,8401
   8401 CONTINUE
   WRITE(6,*)IFI

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60      IF (IFI.GT.1000) CALL GCS(IFI),
        XRETURNS(00,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *25)
        IF (IFI.EQ.555) WRITE(6,2000)
        I19=1
        IF (IFI.EQ.1) CALL FILESIA,HEADM,PRODM,I19)
        402 CONTINUE
65      1052 FORMAT(10 TO MODIFY PARTICULAR ROWS IN THE HEADING, COST OR PROD
        *DUCTION SCHEDULE ARRAYS ENTER 1, OTHERWISE 2,0*)
        READ*,M6
        IF (EOF(5)) 402,0402
        0402 CONTINUE
70      WRITE(4,*)M6
        IF (M6.GT.1000) CALL GCS(M6),
        XRETURNS(00,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *25)
        IF (M6.EQ.555) WRITE(6,2000)
        IF (M6.EQ.1) CALL ROMMODI,HEADM,A,PRODM,NYEARS,COST)
        403 CONTINUE
75      1053 FORMAT(10 TO MODIFY AN ELEMENT OF THE COST ARRAY ENTER 1, OTHERWI
        *SE 2,0*)
        READ*,M6
        IF (EOF(5)) 403,0403
        0403 CONTINUE
80      WRITE(4,*)M6
        IF (M6.GT.1000) CALL GCS(M6),
        XRETURNS(00,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *25)
        IF (M6.EQ.555) WRITE(6,2000)
        IF (M6.EQ.1) CALL ELEMENTIA)
        404 CONTINUE
85      1055 FORMAT(10 TO INSERT A POW IN THE HEADING AND COST ARRAYS ENTER 1, 0
        *THERWISE 2,0*)
        READ*,M5
        IF (EOF(5)) 404,0404
        0404 CONTINUE
90      WRITE(4,*)M5
        IF (M5.GT.1000) CALL GCS(M5),
        XRETURNS(00,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *25)
        IF (M5.EQ.555) WRITE(6,2000)
        IF (M5.EQ.1) CALL RIASERTIA,NYEARS,NROWS,HEADM,PRODM)
        405 CONTINUE
100     1005 FORMAT(10 TO SPECIFY OR MODIFY THE PRODUCTION SCHEDULE ENTER 1 CTME
        *RWISE ENTER 2,0*)
        READ*,I6
        IF (EOF(5)) 405,0405
        0405 CONTINUE
105     WRITE(4,*)I6
        IF (I6.GT.1000) CALL GCS(I6),
        XRETURNS(00,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *25)
        IF (I6.EQ.555) WRITE(6,2000)
        IF (I6.EQ.1) CALL PRODUCTI,PRODM)
        406 CONTINUE
110     1001 FORMAT(10 TO CONSTRUCT OR MODIFY THE HEADING ARRAY ENTER 1, OTHERWI
        *SE ENTER 2,0*)

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115      READ*,IB
        IF(EOF(5)) 406,8406
        8406 CONTINUE
        WRITE(4,*)IB
        IF(18.GT.1000)CALL GCS(18),
120      XRETURNS(18,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(18.EQ.555) WRITE(6,2000)
        IF(18.EQ.1)CALL HARCONEADN,NROWS)
        77 CONTINUE
125      1004 FORMAT(* TO PERFORM CALCULATIONS ENTER 1, OTHERWISE ENTER 2*)
        READ*,ID
        IF(EOF(5)) 77,8077
        8077 CONTINUE
        WRITE(4,*)ID
        IF(10.GT.1000)CALL GCS(ID),
130      XRETURNS(10,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(10.EQ.555) WRITE(6,2000)
        IF(10.EQ.1)CALL CAL(A,NYEARS,NROWS,PCDDH,HEADW)
135      407 CONTINUE
        1008 FORMAT(* TO SPREAD THE DATA ENTER 1, OTHERWISE ENTER 2*)
        READ*,I4
        IF(EOF(5)) 407,8407
        8407 CONTINUE
        WRITE(4,*)I4
        IF(14.GT.1000)CALL GCS(I4),
140      XRETURNS(14,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(14.EQ.555) WRITE(6,2000)
        IF(14.EQ.1)CALL SPREAD(A,NYEARS,NROWS)
145      408 CONTINUE
        1006 FORMAT(* TO CALCULATE THEN YEAR DOLLAR COSTS OR TO CHANGE THE BASE
        *LINE YEAR ENTER 1, OTHERWISE ENTER 2*)
        READ*,IF
        IF(EOF(5)) 408,8408
        8408 CONTINUE
        WRITE(4,*)IF
        IF(16.GT.1000)CALL GCS(IF),
150      XRETURNS(16,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(16.EQ.555) WRITE(6,2000)
        IF(16.EQ.1)CALL ESCALAT (A,B,NYEARS,NROWS)
        IF(16.NE.1)GO TO 425
        DO 201 I=1,50
        DO 201 J=1,20
160      201 A(I,J)=3(I,J)
        425 CONTINUE
        1025 FORMAT(* TO INSERT A COLUMN IN THE COST ARRAY ENTER 1, OTHERWISE 2
        **)
        READ*,IIN
        IF(EOF(5))425,8025
        8025 CONTINUE
        WRITE(4,*)IIN
        IF(18.GT.1000)CALL GCS(IIN),
170      XRETURNS(18,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)

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3 04

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175      IF(IIN.EQ.555) WRITE(6,2000)
        IF(IIN.EQ.1)CALL CINSERT(A,NYEARS)
        677 CONTINUE
1005      FORMAT(* TO OUTPUT THE COST DATA ENTER 1, OTHERWISE ENTER 20*)
        READ*,IE
        IF(IEOF(5)) 677,6677
        8677 CONTINUE
        WRITE(6,*)IE
180      IF(IE.GT.1000)CALL GCS(IE),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
185      IF(IE.EQ.555) WRITE(6,2000)
        IF(IE.EQ.1)CALL OUT(A,NYEARS,NROWS,HEADM)
        489 CONTINUE
1854      FORMAT(* IF A PRINTOUT OF THE COST, HEADING AND/OR PRODUCTION S
        *CHEDULE ARRAY IS DESIRED ENTER 1, OTHERWISE 20*)
        READ*,M8
        IF(IEOF(5)) 489,8409
        8409 CONTINUE
        WRITE(6,*)M8
        IF(M8.GT.1000)CALL GCS(M8),
        XRETURNS(98,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
195      IF(M8.EQ.555) WRITE(6,2000)
        IF(M8.EQ.1)CALL APRINT(NYEARS,NROWS,A,HEADM,PRODM)
        419 CONTINUE
1051      FORMAT(* IF YOU WISH TO SAVE EXISTING ARRAYS ENTER 1 OTHERWISE 20*
        *)
        READ*,I2T
        IF(IEOF(5)) 410,8410
        8410 CONTINUE
        WRITE(6,*)I2T
        IF(I2T.GT.1000)CALL GCS(I2T),
        XRETURNS(18,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(I2T.EQ.555) WRITE(6,2000)
        I19=2
        IF(I2T.EQ.1)CALL FILES(A,HEADM,PRODM,I19)
        411 CONTINUE
1007      FORMAT(* ENTER 2 TO TERMINATE, 1 TO CONTINUE AND 2000 FOR AN EXPLA
        *NATION OF GCS.*)
        READ*,IG
        IF(IEOF(5)) 411,8411
        8411 CONTINUE
        WRITE(6,*)IG
        IF(IG.GT.1000)CALL GCS(IG),
        XRETURNS(88,400,401,402,403,404,405,406,77,407,408,677,409,410,411,
        *425)
        IF(IG.EQ.555) WRITE(6,2000)
        IF(IG.EQ.1)GO TO 88
        IF(IG.EQ.2000)GO TO 411
        STOP
        C
2200      FORMAT(10X,'ROUTINE HELP DOES NOT EXIST IN EAGLES' )
        END

```


STATEMENT LABELS	DEF. LINE	REFERENCES
7524 1005 FMT	175	
7524 1006 FMT	NC REFS	
7454 1006 FMT	NC REFS	
7616 1007 FMT	211	
7433 1008 FMT	NC REFS	
7433 1008 FMT	136	
7344 1009 FMT	NC REFS	
7344 1009 FMT	101	
7582 1025 FMT	NC REFS	
7224 1050 FMT	163	
7224 1050 FMT	NC REFS	
7576 1051 FMT	52	
7250 1052 FMT	NC REFS	
7277 1053 FMT	65	
7545 1054 FMT	NC REFS	
7221 1055 FMT	77	
7641 2000 FMT	NC REFS	
	106	
	49	
	225	
	29	46
	133	144
	59	156
	61	172
	74	183
	66	195
	98	207
	111	223
	122	

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
6220	291	* I	159 161	138	NOT INSTACK
6224	291	J	160 161	38	INSTACK

STATISTICS	
PROGRAM LENGTH	70568 3630
9UFFER LENGTH	5670E 300C
	520008 CM USED


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1  *DECK CAL1
C
C
C
5  *****ARRAYS*****
C
C  HEADM(50,0) PROVIDES THE HEADINGS FOR THE ROWS OF THE COST ARRA
C
C  A(50,20) CONTAINS THE COST DATA.
10 C
C  B(50,20) CONTAINS THE COST INFORMATION ON THE RETURN FROM
C    ROUTINE_ESCALAT.
C
C  PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR THE EQUIPMEN
C
C *****ARRAYS*****
C *****VARIABLES*****
C
C  IA IS AN INDEX THAT ALLOWS CONTINUED PROGRAM OPERATION.
C  NYEARS IS THE NUMBER OF YEARS OF INTEREST.
C  NROWS IS THE NUMBER OF ROWS OF COST DATA THAT WILL BE OUTPUT.
C
C  IB IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
C    SPECIFICATION OF THE HEADINGS WILL BE UTILIZED.
C
C  ID IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
C    CALCULATIONS TO BE MADE WILL BE UTILIZED.
C
C  I4 IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
C    THE SPREADING OF COST DATA WILL BE UTILIZED.
C
C  IE IS AN INDEX THAT DELINEATES WHETHER THE ROUTINE THAT ENABLES
C    THE OUTPUT OF COST DATA WILL BE UTILIZED.
C
C  IF IS AN INDEX THAT DELINEATES WHETHER THE BASELINE COSTS WILL
C    CONVERTED TO A NEW BASELINE, OR TO THEN YEAR DOLLARS,
C    OR REMAIN UNCHANGED.
C
C  IG IS AN INDEX THAT DELINEATES WHETHER THE PRODUCTION SCHEDULE
C    WILL BE SPECIFIED OR LEFT UNCHANGED.
C
C  IG IS AN INDEX THAT DELINEATES WHETHER ANOTHER CASE WILL BE GEN
C    IT ALSO DELINEATES WHETHER CERTAIN INFORMATION WILL BE UNC
C    FROM THE PREVIOUS CASE.
C
C  IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C  IFI DELINEATES WHETHER EXISTING FILES ARE TO BE INPUT.
C
C  M4 DELINEATES WHETHER ROW MODIFICATION IS TO OCCUR.
C
C  M6 DELINEATES WHETHER AN ELEMENT OF THE COST ARRAY IS TO BE MOD
C
C  M5 DELINEATES WHETHER A ROW IS TO BE INSERTED IN THE COST OR ME

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STATISTICS	708	56
PROGRAM LENGTH		
52908 CM USED		


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1      C/
2      C *****ARRAYS*****
3      C
4      C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES FOR ALL THE EQUI
5      C
6      C COST(20) TRANSFERS THE COST INFORMATION AND
7      C IS ALSO USED IN MAKING THE COST CALCULATIONS.
8      C
9      C
10     C PROD(20) DELINEATES THE NUMBER OF ITEMS PRODUCED
11     C DURING EACH TIME INCREMENT.
12     C
13     C
14     C IX(21) IS AN ARRAY WHOSE SECOND THRU 21ST ELEMENTS ARE SET EQUAL
15     C ELEMENTS OF PROD. IX(1) IS SET EQUAL TO ZERO AND IX IS TH
16     C CONVERTED INTO A CUMULATIVE ARRAY.
17     C
18     C *****ARRAYS*****
19     C
20     C *****VARIABLES*****
21     C
22     C JJ3 IS AN INDEX DELINEATING THE PRODUCTION SCHEDULE TO BE USED.
23     C
24     C RATE IS THE LEARNING RATE, I.E., THE RATIO BETWEEN THE COST OF
25     C THE N TH AND 2N TH ITEMS.
26     C
27     C INCRE IS THE NUMBER OF INCREMENTS (USUALLY YEARS) FOR WHICH
28     C CALCULATIONS ARE BEING MADE.
29     C
30     C T1 IS THE COST OF THE FIRST ARTICLE PRODUCED.
31     C
32     C A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
33     C
34     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
35     C *****VARIABLES*****
36     C
37     C/
38     C SUBROUTINE CAL3(A,COST)
39     C
40     C THIS SUBROUTINE CALCULATES A FRACTION OF AN EXISTING RUN IN THE COST
41     C ARRAY, A. THE USER SPECIFIES THE ROW OF A, IA, AND THE ASSOCIATED
42     C FRACTION. THE NEW COST INFORMATION IS STORED AND TRANSFERRED IN THE A
43     C COST.
44     C
45     C/
46     C
47     C SUBROUTINE CAL3(A,COST,NYEARS)
48     C DIMENSION A(50,20),COST(20)
49     C DATA IABC/10/
50     C
51     C CONTINUE
52     C
53     C 4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
54     C RETURN
55     C *DECK CAL2

```

76/76 OPT=1

END

SYMBOLIC REFERENCE MAP (R=2)

DEF LINE REFERENCES

SYMBOL	DEF LINE	REFERENCES	SYMBOL	DEF LINE	REFERENCES
1	51	56	52	DEFINED	51
2	51	56	52	DEFINED	51
3	51	56	53	DEFINED	51
4	51	56	54	DEFINED	51
5	51	56	55	DEFINED	51

SYMBOLIC LABELS

DEF LINE REFERENCES

PROGRAM LENGTH 92885 CM USED

176 15

74/74 OPT=1

FTN 4.6+460

J4/19/70 20.39.20

PAGE 1

```

1      C/
2      C/
3      C/
4      C/
5      C/
6      C/
7      C/
8      C/
9      C/
10     C/
11     C/
12     C/
13     C/
14     C/
15     C/
16     C/
17     C/
18     C/
19     C/
20     C/
21     C/
22     C/
23     C/
24     C/
25     C/
26     C/
27     C/
28     C/
29     C/
30     C/
31     C/
32     C/
33     C/
34     C/
35     C/
36     C/
37     C/
38     C/
39     C/
40     C/
41     C/
42     C/
43     C/
44     C/
45     C/
46     C/
47     C/
48     C/
49     C/
50     C/
51     C/
52     C/
53     C/
54     C/
55     C/

```

*****ARRAYS*****
 A(50,20) IS THE ARRAY CONTAINING THE COST INFORMATION.
 COST(20) IS USED TO STORE AND TRANSFER THE NEWLY CALCULATED COS
 INFORMATION.
 *****ARRAYS*****
 *****VARIABLES*****
 NYEARS IS THE NUMBER OF YEARS OVER WHICH COST INFORMATION IS
 CALCULATED.
 IA IS THE RCM OF INTEREST IN ARRAY A.
 FPAC IS THE FRACTION OF THE RCM TO BE TAKEN.
 IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
 *****VARIABLES*****
 SUBROUTINE CAL2(COST,PROD,INCE)
 GIVEN THE COST OF THE FIRST ARTICLE, T1, A SET OF LEARNING RATES
 .RATES, A STIPULATION OF THE NUMBER OF THE PRODUCTION
 ITEM WHEN EACH RATE BECOMES EFFECTIVE, IUNIT, THE TIME
 INTERVAL ICFE CONSIDERED, INCE, AND THE PRODUCTION SCHEDULE,
 PROD, THEN SUBROUTINE CAL2 CALCULATES THE COST FOR EACH YEAR
 IN BASELINE DOLLARS.
 THE FORMULA USED TO CALCULATE THE COST OF THE I TH ITEM IS

$$T1 * (1 + ((ALOG(RATE(.)) / ALOG(2.)))$$
 IF A NEW LEARNING RATE IS TO COMMENCE WITH THE J TH ARTICLE THEN A
 J1 IS CALCULATED SO THAT THE COST OF THE (J-1) TH ARTICLE WILL REM
 UNCHANGED, NAMELY,

$$T1(NEW) = T1(OLD) * ((J-1) + ((OLD RATE - NEW RATE)))$$
 SUBROUTINE CAL2(COST,PROD,INCE)
 DIMENSION COST(20),RATES(10),IUNIT(10),IX(21)

FTN 4.6+460

24/19/73 20.39.26

PAGE 1

74/74 OPT=1

```

1  C/
2  C
3  C
4  C
5  C *****ARRAYS*****
6  C
7  C
8  C
9  C
10 C
11 C
12 C *****ARRAYS*****
13 C *****ARRAYS*****
14 C *****ARRAYS*****
15 C *****ARRAYS*****
16 C *****ARRAYS*****
17 C *****ARRAYS*****
18 C *****ARRAYS*****
19 C *****ARRAYS*****
20 C *****ARRAYS*****
21 C *****ARRAYS*****
22 C *****ARRAYS*****
23 C *****ARRAYS*****
24 C *****ARRAYS*****
25 C *****ARRAYS*****
26 C *****ARRAYS*****
27 C *****ARRAYS*****
28 C *****ARRAYS*****
29 C *****ARRAYS*****
30 C *****ARRAYS*****
31 C *****ARRAYS*****
32 C *****ARRAYS*****
33 C *****ARRAYS*****
34 C *****ARRAYS*****
35 C *****ARRAYS*****
36 C *****ARRAYS*****
37 C *****ARRAYS*****
38 C *****ARRAYS*****
39 C *****ARRAYS*****
40 C *****ARRAYS*****
41 C *****ARRAYS*****
42 C *****ARRAYS*****
43 C *****ARRAYS*****
44 C *****ARRAYS*****
45 C *****ARRAYS*****
46 C *****ARRAYS*****
47 C *****ARRAYS*****
48 C *****ARRAYS*****
49 C *****ARRAYS*****
50 C *****ARRAYS*****
51 C *****ARRAYS*****
52 C *****ARRAYS*****
53 C *****ARRAYS*****
54 C *****ARRAYS*****
55 C *****ARRAYS*****
56 C *****ARRAYS*****
57 C *****ARRAYS*****
58 C *****ARRAYS*****
59 C *****ARRAYS*****
60 C *****ARRAYS*****
61 C *****ARRAYS*****
62 C *****ARRAYS*****
63 C *****ARRAYS*****
64 C *****ARRAYS*****
65 C *****ARRAYS*****
66 C *****ARRAYS*****
67 C *****ARRAYS*****
68 C *****ARRAYS*****
69 C *****ARRAYS*****
70 C *****ARRAYS*****
71 C *****ARRAYS*****
72 C *****ARRAYS*****
73 C *****ARRAYS*****
74 C *****ARRAYS*****
75 C *****ARRAYS*****
76 C *****ARRAYS*****
77 C *****ARRAYS*****
78 C *****ARRAYS*****
79 C *****ARRAYS*****
80 C *****ARRAYS*****
81 C *****ARRAYS*****
82 C *****ARRAYS*****
83 C *****ARRAYS*****
84 C *****ARRAYS*****
85 C *****ARRAYS*****
86 C *****ARRAYS*****
87 C *****ARRAYS*****
88 C *****ARRAYS*****
89 C *****ARRAYS*****
90 C *****ARRAYS*****
91 C *****ARRAYS*****
92 C *****ARRAYS*****
93 C *****ARRAYS*****
94 C *****ARRAYS*****
95 C *****ARRAYS*****
96 C *****ARRAYS*****
97 C *****ARRAYS*****
98 C *****ARRAYS*****
99 C *****ARRAYS*****
100 C *****ARRAYS*****

```

*****ARRAYS*****
 PRODM(1A,2B) CONTAINS THE PRODUCTION SCHEDULES FOR ALL EQUIPMENTS
 IX(121) IS AN ARRAY WHOSE 2ND THRU 21ST ELEMENTS ARE SET EQUAL TO
 PROD. IX(1) IS SET EQUAL TO ZERO AND IX IS THEN
 CONVERTED TO A CUMULATIVE ARRAY.
 PROD(12B) DELINEATES THE NUMBER OF ITEMS PRODUCED
 DURING EACH TIME INCREMENT.
 COST(2B) TRANSFERS THE COST INFORMATION.
 IT IS ALSO USED IN MAKING THE COST CALCULATIONS.
 RATES(1B) CONTAINS THE LEARNING RATES THAT WILL EXIST OVER THE
 PRODUCTION LIFE.
 IUNIT(1B) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
 NEW LEARNING RATE BECOMES APPLICABLE.
 *****ARRAYS*****
 *****VARIABLES*****
 A, IA, AND IB ARE TERMS USED IN THE CALCULATION.
 T1 IS THE COST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A
 VALUE OF T1 IS CALCULATED AT EACH CHANGE IN THE LEARNING R
 KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
 AND IUNIT.
 J13 DELINEATES THE PRODUCTION SCHEDULE TO BE USED.
 IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
 *****VARIABLES*****
 *****VARIABLES*****
 SUBROUTINE CAL4(COST,NYEARS)
 THIS ROUTINE ENABLES DIRECT SPECIFICATION OF A ROW IN THE COST ARRAY.
 *****VARIABLES*****
 *****VARIABLES*****
 SUBROUTINE CAL4(COST,NYEARS)
 DIMENSION COST(20)
 DATA IABC/11/
 CONTINUE
 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF LAGLE. ')
 RETURN
 *DECK HARCON
 END

PAGE 2

34/13/70 21.33.20

FTN 4,6+45,

SUBROUTINE CAL4 74/74 OPT=1

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 CAL4	50	55

VARIABLES	SN	TYPE	RELOCATION	REFS
0 COST		REAL	ARRAY	51
6 IABC		INTEGER		52
8 MYEARS		INTEGER	*UNUSED	50
			F.P.	50

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	54	

STATISTICS	LENGTH	178	15
PROGRAM	52808	CM	USED

PAGE 2

JL/19/10 2L.32.20

FTN 4.6+461

SUBROUTINE MARCON 74/74 OPT=1

FILE NAMES	MODE	READS	WRITES
INPUT	FMT	34	
TAPEN	FMT		35

STATEMENT LABELS	DEF LINE	REFERENCES
70 25	36	34
8 123	37	31
45 1000	FMT NO REFS	33

LOOPS	LABEL	INDEX	FPCN-TO	LENGTH	PROPERTIES	EXT REFS	NCT	INNER
7	123	* I	31 37	358				
12		* J	34 34	119				
27		* J	35 35	118				

STATISTICS
 PROGRAM LENGTH 1882 64
 PROGRAM 52009 CM USED

PAGE 1

24/19/75 20.39.26

FTN 4.6+460

74/74 OPT=1

```

1 C/
2 C
3 C
4 C
5 C HEADW(50,8) CONTAINS THE HEADINGS FOR EACH ROW IN THE COST
6 C ARRAY.
7 C
8 C *****ARRAYS*****
9 C
10 C *****ARRAYS*****
11 C *****VARIABLES*****
12 C
13 C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
14 C
15 C/
16 C
17 C
18 C *****ARRAYS*****
19 C
20 C A(50,20) IS THE ARRAY CONTAINING THE ORIGINAL COST DATA. UPON
21 C RETURN FROM THIS SUBROUTINE IT CONTAINS THE COSTS AFTER
22 C SPREADING.
23 C
24 C S(50,30) IS USED IN CALCULATING THE SPREAD COST DATA.
25 C
26 C SPR(50,9) IS USED TO SPECIFY HOW THE COSTS ARE SPREAD.
27 C IF A COST IS ORIGINALLY SPECIFIED FOR YEAR J THEN THIS PCU
28 C CAN SPREAD THE COSTS OVER THE (J-1)TH TO THE (J+1)TH YEAR.
29 C SPR CAN CONTAIN 50 DIFFERENT SPREADING ARRAYS.
30 C
31 C *****ARRAYS*****
32 C *****VARIABLES*****
33 C
34 C IA IS AN INDEX THAT DELINEATES WHETHER AN EXPLANATION OF THIS
35 C ROUTINE WILL BE OUTPUT.
36 C
37 C IB DELINEATES IF THE DEFAULT ARRAY WILL BE ACCEPTED.
38 C
39 C IC HAS THE SAME FUNCTION AS IB.
40 C
41 C ID DELINEATES WHETHER EACH COST IS TO BE IDENTICALLY SPREAD.
42 C
43 C IE IS THE NUMBER OF DIFFERENT WAYS THE COST DATA WILL BE SPREAD
44 C IF DELINEATES THE SPREADING VERSION TO BE USED.
45 C
46 C KK IS USED TO DETERMINE THE FIRST NON-ZERO COST COLUMN
47 C OF ARRAY B AND TO SET THIS COLUMN EQUAL TO THE FIRST COLUMN
48 C IN ARRAY A.
49 C
50 C KA IS USED TO INDEX THE COLUMNS OF THE COST ARRAY. IT IS THE L
51 C NON-ZERO COLUMN NUMBER.
52 C
53 C NYEARS IS THE NUMBER OF YEARS OF INTEREST.-----NOT. THIS VALUE

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```

C MAY CHANGE AS THE RESULT OF SPREADING.
C
C NROWS IS THE NUMBER OF DIFFERENT COST ELEMENTS (ROWS) IN
C THE COST ARRAY.
C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C *****VARIABLES*****
C *****VARIABLES*****
C
C/
C
C SUBROUTINE CAL(A,NYEARS,NROWS,PRODM,HEADM)
C
C THIS ROUTINE PROVIDES AN INTERFACE WITH THE ROUTINES THAT
C PERFORM CALCULATIONS. THE ROUTINE PROVIDES INITIAL PROMPTING TO THE U
C SO THAT DETAILED PROMPTING IS NOT REPEATED EVERY TIME A CALCULATING
C ROUTINE IS CALLED.
C
C/
C
C SUBROUTINE CAL(A,NYEARS,NROWS,PRODM,HEADM)
C DIMENSION A(50,20),COST(20),HEADM(50,6)
C INTEGER PRCON(10,20)
C DATA IABC/1/
C CONTINUE
C 4461 FORMAT(10 THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.0)
C RETURN
C *DECK ESCALAT
C END

```

SYMBOLIC REFERENCE MAP (P=2)

[illegible]

STATISTICS

PROGRAM LENGTH
52008 CM USED

438 35

34/19/76 20.39.20

FTN 4.6460

74/74 OPT=1

```

1      C
2      C/
3      C
4      C
5      C *****ARRAYS*****
6      C
7      C A(50,20) STORES COST DATA.
8      C
9      C COST(20) TRANSFERS THE COST DATA OBTAINED FROM A
10     C PARTICULAR CALCULATION.
11     C
12     C PPOOH(10,20) CONTAINS THE PRODUCTION SCHEDULES. EACH
13     C ELEMENT REPRESENTS 1 YEAR.
14     C
15     C HEADH(50,0) CONTAINS THE HEADING FOR EACH ROW IN THE COST ARRAY
16     C *****ARRAYS*****
17     C *****VARIABLES*****
18     C
19     C IA IS AN INDEX DELINEATING WHETHER AN EXPLANATION OF THE ROUTIN
20     C IS REQUIRED.
21     C
22     C NROWS IS THE NUMBER OF COST ELEMENTS IN THE COST ARRAY.
23     C
24     C NYEARS IS THE NUMBER OF YEARS OVER WHICH COSTS OCCUR.
25     C
26     C IB IS AN INDEX THAT DELINEATES THE TYPE OF CALCULATION TO BE
27     C PERFORMED.
28     C
29     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
30     C
31     C KKK DELINEATES THE ROW OF THE COST ARRAY BEING CALCULATED.
32     C *****VARIABLES*****
33     C *****
34     C/
35     C
36     C SUBROUTINE ESCALAT (A,B,NYEARS,NPONS)
37     C
38     C THIS ROUTINE RECEIVES COST DATA IN BASELINE YEAR DOLLARS AND TRANSFORM
39     C THE DATA INTO THEN YEAR DOLLARS OR INTO DIFFERENT BASELINE DOLLARS.
40     C
41     C THE COMPUTATIONAL PROCEDURE IS AS FOLLOWS.-----THE ARRAY,
42     C A, CONTAINS THE COSTS PER SEGMENT PER YEAR IN A GIVEN YEAR DOLLARS.
43     C BY SPECIFYING THE APPROPRIATE INFLATION OR DEFLATION FACTORS, OR A
44     C SET OF DEFAULT VALUES, THE COSTS ARE TRANSFORMED.
45     C
46     C THE BASELINE YEAR DOES NOT HAVE TO BE THE YEAR CORRESPOND-
47     C ING TO THE FIRST ELEMENT OF THE ESCALATION ARRAY, BUT THE CORRESPON-
48     C DANCE MUST BE SPECIFIED.
49     C
50     C
51     C
52     C
53     C
54     C
55     C

```


PAGE 2

J4/19/73 20.39.20

FTN 4.64460

74/74 OPT=1

```

60      C/
          SUBROUTINE ESCALAT (A,B,NYEARS,NROWS)
          DIMENSION A(50,20),B(50,20),ESC(20),ES(20)
          DATA IABC/8/

          C** DEFINE DEFAULT ESCALATION ARRAY.
          DATA (ESC(I),I=1,20)/2*1.,1.027,1.067,1.062,1.057,1*1.055/
          9888 CONTINUE
          688 FORMAT(* ** SUBROUTINE ESCALAT DOES NOT EXIST HERE.***)
          RETURN
          END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY	PCINTS	DEF	LINE	REFERENCES
3	ESCALAT		59	67

VARIABLES	SN	TYPE	RELOCATION	REFS
0 A		REAL	ARRAY	60
0 B		REAL	ARRAY	60
42 ES		REAL	*UNDEF	60
16 ESC		REAL	APRAY	60
6 IABC		* INTEGER		61
0 NROWS		INTEGER	*UNUSED	59
0 NYEARS		INTEGER	*UNUSED	59

STATEMENT LABELS	DEF	LINE	REFERENCES
7 688	FM	NC REFS	65
0 9688		INACTIVE	65

STATISTICS	PROGRAM	LENGTH	CM USED
	52008	66P	54

```

1  *DECK NEMRA
C/
C *****ARRAYS*****
5  A(50,20) IS THE ARRAY TO BE ESCALATED.
C
C B(50,20) IS THE ARRAY AFTER ESCALATION.
C
10 ESC(20) IS THE DEFAULT ESCALATION ARRAY.
C
C ES(20) IS THE OPERATIONAL ESCALATION ARRAY.
C *****ARRAYS*****
C *****VARIABLES*****
15 C
C IX DETERMINES IF THE DEFAULT ESCALATION ARRAY IS TO BE DISPLAYED
C 1=DISPLAYED
C 2=NOT DISPLAYED
C
20 C
C IY DETERMINES WHETHER THE DEFAULT ESCALATION ARRAY IS TO BE
C ACCEPTED IN TOTO.
C 1=ACCEPTED.
C 2=NOT ACCEPTED IN TOTO.
C
25 C
C IZ IS THE ELEMENT OF THE DEFAULT ESCALATION ARRAY TO BE CHANGED
C C IS THE NEW VALUE FOR THE IZ ELEMENT.
C
30 C
C IL IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C BASELINE YEAR.
C
C ID IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C FIRST YEAR OF THE ANALYSIS.
35 C
C KK IS AN INDEX USED IN MAKING THE ELEMENTS OF ES(.) PROPERLY
C CORRESPOND TO THOSE OF A(...).
C
C MOLD IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C EXISTING BASELINE YEAR.
C
C MNEW IS THE ELEMENT OF THE ESCALATION ARRAY CORRESPONDING TO THE
C NEW BASELINE YEAR.
C
40 C
C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C ICUM EQUALS 7 IF CUMULATIVE VALUES ARE TO BE INPUT INTO THE
C ESCALATION ARRAY.
C *****VARIABLES*****
45 C
C/
50 C
C *****SUBROUTINE NEMRA(KK,RATES,I1,IUNIT,A)
C
55 C
C GIVEN THE OLD AND NEW LEARNING RATES, BOTH CONTAINED IN ARRAY RATE

```

```

C THE PRODUCTION NUMBER OF THE UNIT WITH WHICH THE CHANGE IS TO COMM
C CONTAINED IN ARRAY IUNIT, AND INDEX KK, THEN THE NEW RATE IS
C KNOWN AND A NEW T1 CAN BE DETERMINE SO THAT THE COST OF THE LAST
C ARTICLE PRODUCED USING THE PREVIOUS LEARNING RATE REMAINS UNCHANGE
C THE FORMULA IS
C
C T1(NEW)=T1(OLD)*(PREVIOUS ARTICLE NUMBER**(OLD RATE-NEW RATE))
C/
C
SUBROUTINE NEMRA(KK,RATES,T1,IUNIT,A)
DIMENSION RATES(10),IUNIT(10)
DATA IABC/13/
CONTINUE
4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
*DECK CALS
RETURN
END

```

SYMBOLIC REFERENCE MAP (F=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 NEMRA	72	77

VARIABLES	SN	TYPE	RELOCATION	DEF LINE	REFERENCES
0 A		REAL	*UNUSED	72	72
6 IABC		* INTEGER	DEFINED	74	74
0 IUNIT		INTEGER	ARRAY	73	73
0 KK		INTEGER	*UNUSED	72	72
0 RATES		REAL	ARRAY	73	73
0 T1		REAL	*UNUSED	72	72

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	75	75

STATISTICS	PROGRAM	LENGTH	CM USED
	520003	178	15

AD-A058 352

ARINC RESEARCH CORP ANNAPOLIS MD

F/G 9/2

ENHANCEMENT OF COMPUTER PROGRAM EAGLE. VOLUME III. QUICK PROGRA--ETC(U)

MAY 78 P J ORTH

F33657-77-D-0029

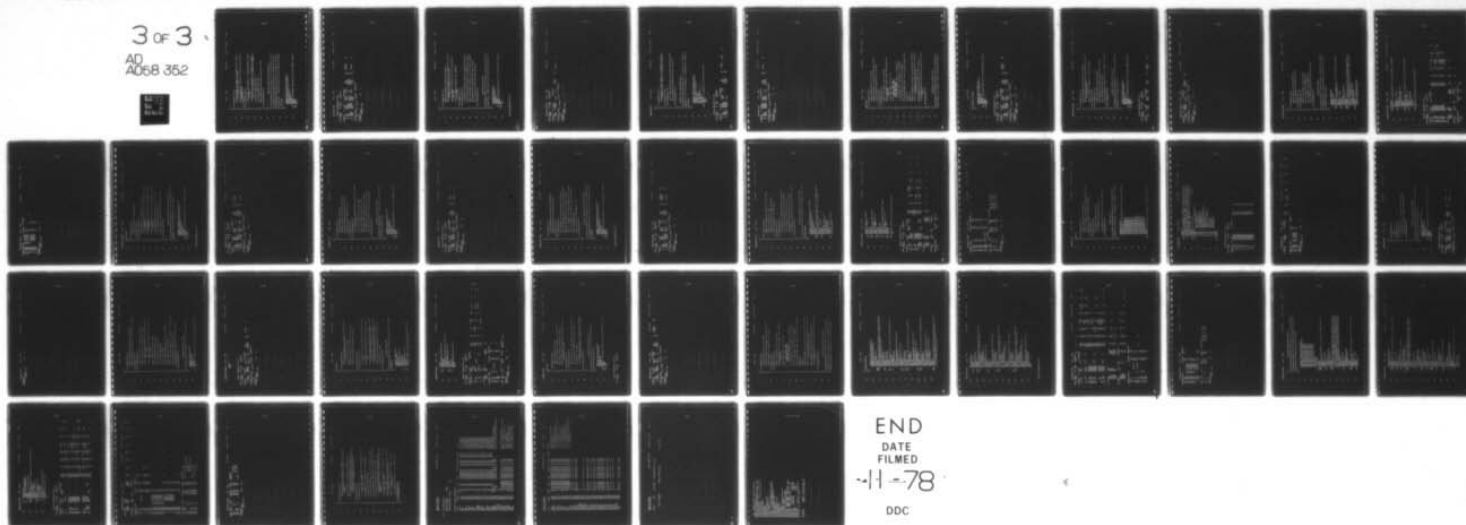
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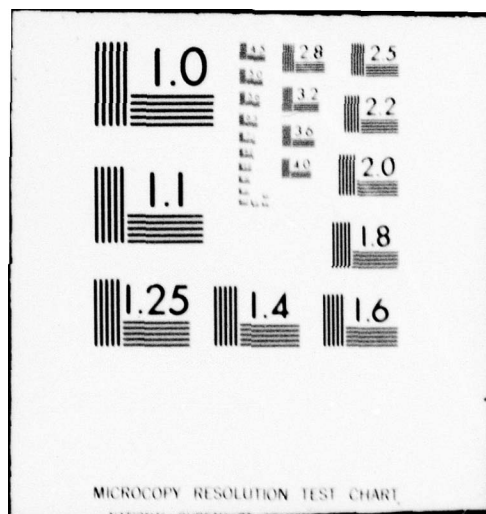
UNCLASSIFIED

1982-01-1-1756-VOL-3

3 of 3

AD
A058 352





```

1  C/
2  C/
3  C/
4  C/
5  C/ *****ARRAYS*****
6  C/
7  C/ JUNIT(10) CONTAINS THE NUMBER OF THE PRODUCTION ITEM AT WHICH A
8  C/ NEW LEARNING RATE BECOMES APPLICABLE
9  C/
10 C/ RATES(10) CONTAINS THE LEARNING RATES WHICH WILL EXIST OVER THE
11 C/ PRODUCTION LIFE.
12 C/ *****ARRAYS*****
13 C/ *****VARIABLES*****
14 C/
15 C/ KK IS AN INDEX USED TO SPECIFY THE APPROPRIATE ELEMENT OF RATES
16 C/ AND JUNIT.
17 C/
18 C/ T1 IS THE CCST OF THE FIRST UNIT. FOR MATHEMATICAL REASONS A N
19 C/ VALUE OF T1 IS CALCULATED AT EACH CHANGE IN THE LEARNING R
20 C/
21 C/ B IS LN(OLD LEARNING RATE)/LN(2.)
22 C/
23 C/ A IS LN(NEW LEARNING RATE)/LN(2.)
24 C/
25 C/ IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
26 C/ *****VARIABLES*****
27 C/
28 C/
29 C/
30 C/ SUBROUTINE CALS(A,COST,NYEARS,PROD,KKK)
31 C/
32 C/ IT IS NOT UNUSUAL FOR A COST ELEMENT (ROW OF THE COST ARRAY) TO BE COM
33 C/ OF THE SUM OF TWO OR MORE COSTS OBTAINED FROM SEPARATE CALCULATIONS.
34 C/
35 C/ CALS ACCOMPLISHES THIS OVERALL CALCULATION BY STORING THE CUMULATIVE C
36 C/ IN ARRAY TCOST. THE USER SPECIFIES THE NUMBER OF SEPARATE CALCULATION
37 C/ TO BE MADE.
38 C/
39 C/
40 C/
41 C/
42 C/
43 C/ SUBROUTINE CALS(A,COST,NYEARS,PROD,KKK)
44 C/ DIMENSION A(50,20),CCST(20),TCOST(2.)
45 C/ INTEGER PROD(10,20)
46 C/ DATA IABC/12/
47 C/ CONTINUE
48 C/
49 C/ 4441 FORMAT(' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF LAGLE. ')
50 C/ RETURN
51 C/ *DECK PRODC
52 C/ END

```


JL/19/76 26.25.20

FTN 4.6+460

SUBROUTINE CALS 74/74 CPT=1

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES

51

VARIABLES SM TYPE RELOCATION

VARIABLES	SM	TYPE	RELOCATION	REFS
0 A	REAL	ARRAY	F.P.	REFS
0 COST	REAL	ARRAY	F.P.	REFS
6 IABC	INTEGER	UNUSED	F.P.	DEFINED
0 KKK	INTEGER	UNUSED	F.P.	DEFINED
0 MYEARS	INTEGER	ARRAY	F.P.	REFS
0 PRODM	INTEGER	UNDEF	F.P.	REFS
17 TCOST	REAL			REFS

STATEMENT LABELS DEF LINE REFERENCES

50

STATISTICS

PROGRAM LENGTH 520088 CH USED

438 35

3 28

```

1 C
2 C
3 C
4 C
5 C *****ARRAYS*****
6 C
7 C PRODM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
8 C
9 C COST(20) STORES AND TRANSFERS THE COST INFORMATION EACH TIME AN
10 C INTERFACE WITH ANOTHER ROUTINE IS MADE.
11 C
12 C TCOST(20) STORES THE CUMULATIVE COSTS AS THE CALCULATION IS
13 C BEING MADE.
14 C
15 C A(50,20) CONTAINS THE BASELINE COST INFORMATION
16 C TO BE OUTPUT.
17 C
18 C *****ARRAYS*****
19 C *****VARIABLES*****
20 C
21 C IA INDICATES THE NUMBER OF SEPARATE CALCULATIONS THAT WILL EL M
22 C IB IS AN INDEX USED TO DETERMINE THE SUBROUTINE TO BE CALLED.
23 C
24 C NYEARS IS THE NUMBER OF YEARS OVER WHICH THE COST CALCULATION I
25 C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
26 C KKK IS THE ROW OF THE COST ARRAY BEING CALCULATED.
27 C *****VARIABLES*****
28 C
29 C
30 C
31 C
32 C
33 C
34 C
35 C SUBROUTINE PRODCU(PRODM)
36 C
37 C THIS ROUTINE IS USED TO SPECIFY THE PRODUCTION SCHEDULES, WHICH ARE ST
38 C IN ARRAY PRODM, ELEMENT (10,20) OF PRODM RECORDS THE NUMBER OF SCHED
39 C
40 C
41 C
42 C
43 C SUBROUTINE PRODCU(PRODM)
44 C INTEGER PRODM(10,20)
45 C DATA IABC/6/
46 C CONTINUE
47 C 4441 FORMAT(10 THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.0)
48 C RETURN
49 C *DECK OUT
50 C END

```

SYMBOLIC REFERENCE MAP (R=2)

PAGE 2

J-19/75 26.39.20

FTN 4.60-60

SUBROUTINE PROFUC 74/74 OPT=1

ENTRY POINTS DEF LINE REFERENCES

3 PRODC 43 46

VARIABLES SN TYPE PELOCATION

6 IABC * INTEGER

8 PRODM INTEGER

ARRAY F.P.

DEFINED

REFS

45

44

DEFINED

43

STATEMENT LABELS DEF LINE REFERENCES

7 4441 PNT NC REFS 67

STATISTICS

PROGRAM LENGTH

52809 CH USED

172

15

34/12/75 21.39.25

FTN 4.6+43.

SUBROUTINE OUT 74/74 OPT=1

VARIABLES		SN	TYPE	RELOCATION		REFS
16	I22		INTEGER	*UNDEF		REFS
42	NAME		INTEGER	ARRAY		REFS
0	NROWS		INTEGER	*UNUSED	F.P.	DEFINED
0	MYEARS		INTEGER	*UNUSED	F.P.	DEFINED
						32
						33
						31
						31

DEFINED 36

STATEMENT LABELS

10 6299 FMT NC REFS 35

DEF LINE REFERENCES

STATISTICS

PROGRAM LENGTH 568 54

520009 CM USED

```

1  *DECK ADDL
C
C *****ARRAYS*****
C
5  A(50,20) CONTAINS THE DATA TO BE OUTPUT.
C
C HEAD(10,0) CONTAINS THE HEADINGS FOR EACH ROW OF ARRAY A.
C
10 IZZ(23) CONTAINS THE SPECIFICATION OF THE YEARS.
C
C *****ARRAYS*****
C
C *****VARIABLES*****
C
15 NYEARS IS THE NUMBER OF YEARS OF INTEREST.
C
C NROWS IS THE NUMBER OF ROWS IN ARRAY A WHICH CONTAIN COST
C INFORMATION.
C
20 II IS A FORMAT INDEX. 1=E, 2=F, 3=I.
C
C IX IS A TABLE HEADING INDEX.
C 1=BASELINE YEAR DOLLARS.
C 2=THEN YEAR DOLLARS.
C 3=.... YEAR DOLLARS. (WHERE .... IS SPECIFIED.)
C
25 IV IS THE VALUE OF THE YEAR INDICATED IN IX=3 ABOVE.
C
C IZ IS THE FIRST YEAR IN WHICH COSTS ARE INCURRED.
C
30 IA IS A TABLE HEADING INDEX. 1=FISCAL YEARS, 2=CALENDAR YEARS.
C
C NX=NYEARS + 1
C N=NROWS + 1
C
35 INUM IS THE NUMBER OF THE DEVICE ON WHICH THE OUTPUT IS PRINTED
C
C IFLAG IS AN INDEX DELINEATING WHETHER THE OUTPUT IS PRINTED ONE
C THE TERMINAL OR PLACED ON FILE.
C
40 IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
C
C L4 DELINEATES WHETHER THE FIRST COLUMN IS TO BE TITLED "PREVIOUS
C COSTS".
C
45 *****VARIABLES*****
C
50
C
C SUBROUTINE ACOL(4,NYEARS,COST)
C
55 C THIS ROUTINE ADDS ANY NUMBER OF SPECIFIED ROWS FROM THE COST ARRAY TO
C FORM A NEW ROW. ALL ELEMENTS OF THIS NEW ROW ARE THEN MULTIPLIED BY

```


C
C A SPECIFIED CONSTANT.
C
C/
C

60

SUBROUTINE ACCL (A, NYEARS, COST)
DIMENSION A(50, 20), IARR(50), COST(20)
DATA IARR/15/
CONTINUE

65

4441 FORMAT (' THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE. ')
*DECK DIVDEL
END

70

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
3 ADDL	63	68

VARIABLES	SM	TYPE	RELOCATION	REFS
A	REAL	ARRAY	F.P.	63
B	COST	REAL	ARRAY	63
5	IARR	INTEGER	DEFINED	65
17	IARR	INTEGER	*UNDEF	64
8	NYEARS	INTEGER	*UNUSED	63
			F.P.	63

STATEMENT LABELS	DEF LINE	REFERENCES
7 4441	FPT NC REFS	67

STATISTICS	PROGRAM LENGTH	CM USED
	1010	65
	528808	

PAGE 2

JUL 1976 26.33.26

FTN 4.64+02

SUBROUTINE DIVDEL 74/74 OPT=1

VARIABLES	SN	TYPE	RELOCATION	DEFINED
6 IABC	*	INTEGER		39
8 NYEARS		INTEGER	*UNUSED F.P.	37

STATEMENT LABELS	DEF	LINE	REFERENCES
7 4441	FPT	NC REFS	41

STATISTICS	LENGTH	17E	15
PROGRAM	520008	CM	USED

STATEMENT LABELS	DEF. LINE	REFERENCES
54 35	64	47
37 88	58	62
5 99	39	43

STATEMENT LABELS DEF LINE REFERENCES

72	1000	FMT NC REFS	40	
117	1001	FMT NC REFS	49	
170	1002	FMT NC REFS	59	
212	1023	FMT NC REFS	69	
234	2000	FMT	77	
		INACTIVE	55	46
	0 9000		54	54
	0 8035	INACTIVE	72	71
	0 8088	INACTIVE	63	62
	0 8099	INACTIVE	44	43
21	9000		43	54

65

STATISTICS

PROGRAM LENGTH	2556	173
520608 CM USED		

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS DEF LINE REFERENCES

3 RINSERT 42 45

VARIABLES	SN	TYPE	PELOCATION	REFS
0 A		REAL	AFRAY F.P.	43
16 COST		REAL	UNOFF F.P.	43
0 HEADW		REAL	AFRAY F.P.	43
6 IABC		INTEGER	UNUSED F.P.	42
0 NQOWS		INTEGER	UNUSED F.P.	42
0 NYEAPS		INTEGER	AFRAY F.P.	44
0 PRODP		INTEGER	AFRAY F.P.	44

STATEMENT LABELS DEF LINE REFERENCES

7 4441 FMT NO REFS 47

STATISTICS

PROGMAP LENGTH 42E 34

52888 CM USED

3 41

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PAGE 2

04/19/74 21.35.20

FTN 4.6+450

SUBROUTINE CUM 74/74 OPT=1

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS DEF LINE REFERENCES
3 CUM 43 43

VARIABLES	SN	TYPE	RELOCATION	REFS
0 COST		REAL	APRAY	44
6 IABC		INTEGER		45
0 MYEARS		INTEGER	*UNUSED	43
0 PROOM		INTEGER	APRAY	45

STATEMENT LABELS DEF LINE REFERENCES
7 4441 FMT NO REFS 46

STATISTICS
PROGRAM LENGTH 17E 15
520000 CM USED

SUBROUTINE ROWMCO 74/74 CPT=1 FTN 4,6+00 04/19/74 20,39,20 PAGE 1

```

1  C/
2  C
3  C *****ARRAYS*****
4  C
5  C COST(20) TRANSFERS THE CALCULATED COST INFORMATION.
6  C
7  C PROCM(10,20) CONTAINS THE PRODUCTION SCHEDULES.
8  C
9  C *****ARRAYS*****
10 C
11 C *****VARIABLES*****
12 C
13 C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
14 C
15 C SUM IS THE CUMULATIVE COST IF THE FIRST UNIT COST WERE ONE.
16 C
17 C CUMCOST IS THE CUMULATIVE COST OF THE GROUP OF UNITS.
18 C
19 C IFIRST IS THE NUMBER OF THE FIRST PRODUCED UNIT OF THE GROUP.
20 C
21 C ISEC IS THE NUMBER OF THE LAST PRODUCED UNIT OF THE GROUP.
22 C
23 C RATE IS THE LEARNING RATE.
24 C
25 C T1 IS THE COST OF THE FIRST PRODUCED UNIT.
26 C
27 C *****VARIABLES*****
28 C
29 C/
30 C
31 C SUBROUTINE ROWMCO(HEADM,A,PROCM,NYEARS,COST)
32 C
33 C THIS ROUTINE ENABLES THE MODIFICATION OF A ROW IN THE HEADING, COST OR
34 C PRODUCTION_SCHEDULE_ARRAYS. FOR MODIFICATION CAN BE REPEATED AS OFTEN
35 C AS DESIRED.
36 C
37 C/
38 C
39 C SUBROUTINE ROWMCO(HEADM,A,PROCM,NYEARS,COST)
40 C
41 C DIMENSION A(50,20),HEADM(50,6),COST(20)
42 C INTEGER PROCM(10,20)
43 C DATA IABC/17/
44 C CONTINUE
45 C 4441 FORMAT(* THIS ROUTINE EXISTS ONLY IN THE OTHER VERSION OF EAGLE.*)
46 C RETURN
47 C *DECK APRINT
48 C END
49 C
50 C

```

SYMBOLIC REFERENCE MAP (P=2)

04/13/78 20.39.20

FTN 4.64450

SUBROUTINE RCHMOD 74/74 CPT=1

ENTRY POINTS DEF LINE REFERENCES
3 RCHMOD 42 48

VARIABLES	SN	TYPE	RELOCATION	REFS
C A		REAL	F.P.	REFS
0 COST		REAL	F.P.	REFS
0 HEADW		REAL	F.P.	REFS
6 IABC		INTEGER		DEFINED
0 MYEARS		INTEGER	F.P.	DEFINED
0 PRODM		INTEGER	F.P.	REFS

STATEMENT LABELS DEF LINE REFERENCES
7 4441 FRT NC REFS 47

STATISTICS
PROGRAM LENGTH 176 15
520005 CM USED


```

60      PRINT 111, (A(I,J), J=1, NYEARS)
        FORMAT(" ", 10E11.3)
        111 CONTINUE
        GO TO 87
25      PRINT 209
209     FORMAT("1", " THE HEADING ARRAY.")
        DO 210 I=1, NPOWS
        PRINT 211, (HEAD(I,J), J=1, 6)
211     FORMAT(" ", 8A10)
        210 CONTINUE
        GO TO 97
35     IC=PROD(10,20)
        PRINT 309
309     FORMAT("1", " THE PRODUCTION SCHEDULE A, RAY.")
        DO 310 I=1, IC
        PRINT 311, (PRODM(I,J), J=1, 20)
311     FORMAT(" ", 20I5)
        310 CONTINUE
        GO TO 87
70      C
        2000 FORMAT(10X, "ROUTINE HELP NOT AVAILABLE IN EAGLES")
        END
    
```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES	
3 APRINT	40	54	
VARIABLES	SN	TYPE	RELOCATION
0 A	REAL	APRAY	F.P.
0 HEAD	REAL	ARRAY	F.P.
245 I	INTEGER		
244 IA	INTEGER		
122 IABC	* INTEGER		
247 IC	INTEGER		
246 J	INTEGER		
0 NROWS	INTEGER		F.P.
0 NYEARS	INTEGER		F.P.
0 PRODM	INTEGER	ARRAY	F.P.
FILE NAMES	MODE		
INPUT	FREE	READS	47
OUTPUT	FMT	WRITES	55
TAPE4	FREE	WRITES	50
TAPES	FMT	WRITES	51
EXTERNALS	TYPE	ARGS	REFERENCES
EOF	REAL	1	40
STATEMENT LABELS	DEF LINE	REFERENCES	
50 25	62	52	
73 35	69	53	

41	50	DEFINED	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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PAGE 3

04/19/78 21.39.20

FTN 406460

SUBROUTINE APRINT 74/74 CPT=1

STATEMENT LABELS	DEF LINE	REFERENCES	61	65	76
5 87	44	46			
156 109	56	55			
0 110	60	57			
170 111	59	58			
176 209	63	62			
0 210	67	64			
210 211	66	65			
216 309	71	70			
0 310	75	72			
232 311	74	73			
123 1000	45				
235 2800	78	51			
0 8087	49	48			

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
30	110	* I	57 60	208	EXT REFS NOT INNER
31		* J	58 58	118	EXT REFS NOT INNER
53	210	* I	64 67	208	EXT REFS NOT INNER
56		* J	65 65	118	EXT REFS NOT INNER
100	310	* I	72 75	208	EXT REFS NOT INNER
103		* J	73 73	118	EXT REFS NOT INNER

STATISTICS
 PROGRAM LENGTH 2578 175
 520009 CM USED

PAGE 2

DATE: 20.3.20

FTN 4.64-60

SUBROUTINE GCS 74/74 OPT=1

```

60      CONTINUE
      1001 FORMAT(' IF IN RESPONSE TO AN INTEGER REQUEST 1000 PLUS ONE OF GER
      *TAIN SPECIFIED STATEMENT',/, ' NUMBERS IS INPUT THEN THE USER IS BE
      *NT DIRECTLY TO THAT STATEMENT NUMBER',/, ' THUS, FOR EXAMPLE, A RE
      *SPONSE OF 1000 WOULD SEND THE USER TO STATEMENT 80 WHICH REQUESTS
      *THE NUMBER OF YEARS OF INTEREST',/, ' THIS IS APPLICABLE FOR THE
      * FOLLOWING STATEMENT NUMBERS WHOSE REQUESTS END IN THE SYMBOL #.')
      CONTINUE
      1010 FORMAT(' STATEMENT NUMBER
      1200 FORMAT('
      84 YEARS SPECIFICATION',/,
      ROWS SPECIFICATION',/,
      INPUT FILES',/,
      ROW MODIFICATION',/,
      ELEMENT MODIFICATION',/,
      ROW INSERTION',/,
      PRODUCTION SCHEDULE',/,
      HEADING ARRAY SPECIFICATION',/,
      CALCULATIONS',/,
      SPREADING THE DATA',/,
      ALLOWING FOR INFLATION',/,
      OUTPUT',/,
      ARRAY CHECK',/,
      STORE FILES',/,
      TERMINATE',/,
      COLUMN INSERT')
      17 RETURN
      85 *DECK INTERP
      END

```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS	DEF LINE	REFERENCES	
3 GCS	36	84	
VARIABLES	SN	TYPE	RELOCATION
110 IARC	*	INTEGER	
0 L1		RETURNS	39
0 L10		RETURNS	39
0 L11		RETURNS	40
0 L12		RETURNS	49
0 L13		RETURNS	50
0 L14		RETURNS	51
0 L15		RETURNS	52
0 L16		RETURNS	53
0 L17		RETURNS	54
0 L18		RETURNS	55
0 L19		RETURNS	56
0 L20		RETURNS	57
0 L21		RETURNS	58
0 L22		RETURNS	59
0 L23		RETURNS	60
0 L24		RETURNS	61
0 L25		RETURNS	62
0 L26		RETURNS	63
0 L27		RETURNS	64
0 L28		RETURNS	65
0 L29		RETURNS	66
0 L30		RETURNS	67

FTN 4.6+450

J-1973 20.33.26

PAGE 3

74/74 OPT=1

SUBROUTINE GCS

VARIABLES	SN	TYPE	RELOCATION
P N	INTEGER		F.P.
REFS	39	41	43
	47	42	44
	55	50	51
		40	
		48	
		DEFINED	
			36

STATEMENT LABELS	DEF LINE	REFERENCES
107 17	84	55
111 1000	FMT NC REFS	57
120 1001	FMT NC REFS	59
171 1010	FMT NC REFS	66
200 1200	FMT NC REFS	68

STATISTICS	PROGRAM LENGTH	CM USED
	2608	176
	52008	

PAGE 2

06/13/76 21.33.20

FTN 466468

74/74 OPT=1

SUBROUTINE T1SL

STATISTICS
PROGRAM LENGTH 17E 15
52000B CM USED

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1012
1013
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1017
1018
1019
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1021
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1038
1039
1040

```


SUBROUTINE CINSERT 74/74 OPT=1

FTN 406460

34/19/70 20.39.20

PAGE 2

RETURN
END

SYMBOLIC REFERENCE MAP (R=21)

ENTRY POINTS DEF LINE REFERENCES
3 CINSERT 53 50

VARIABLES	SN	TYPE	RELOCATION	REFS
0 A		REAL	ARRAY	F.P.
5 IABC		* INTEGER		DEFINED
8 NYEARS		INTEGER	*UNUSED	F.P.
				DEFINED

54 DEFINED 53
55
53

STATEMENT LABELS DEF LINE REFERENCES
4441 FMT NO REFS 57

STATISTICS
PROGRAM LENGTH 17E 15
520008 CM USED


```
GO TO 5
75 DECODE(7,100,SUB) (SNAM(I),I=2,8)
100 FORMAT(9A1)
    SNAM(I)=SYN
    IF(SNAM(2).LT.1MA.OR.SNAM(2).GT.1M2)GO TO 20
    DO 200 I=2,8
    IF(SNAM(I).EQ.BLANK)GO TO 250
    200 CONTINUE
    I=9
    250 SNAM(I)=SYN
    ENCODE(1,100,SUB) (SNAM(I),I=1,1)
    RETURN
    70  END
```

SYMBOLIC REFERENCE MAP (P=2)

ENTRY POINTS		DEF LINE		REFERENCES	
3 NAMCHK		47		69	
VARIABLES		SN TYPE		RELOCATION	
44	BLANK	REAL			
113	I	INTEGER			
114	J	INTEGER			
115	SNAM	REAL	ARRAY		
0	SUB	INTEGER		F.P.	
43	SYN	REAL			
FILE NAMES		MCOE			
TAPES		FMT		WRITES	
		FMT		READS	
				REFERENCES	
5	5			51	58
56	10	FMT		53	51
14	20			55	52
60	25	FMT	NC REFS	56	
15	75			59	54
101	100	FMT		60	59
0	200			65	63
33	250			67	64
54				64	64
55				64	64
68				DEFINED	68
48				2*62	64
43				52	54
61				67	DEFINED
50				2*68	DEFINED
59					DEFINED
63					50
61					53
51					50

FILE NAMES		MCOE		WRITES	
TAPES		FMT		READS	
		FMT		REFERENCES	
5	5			51	58
56	10	FMT		53	51
14	20			55	52
60	25	FMT	NC REFS	56	
15	75			59	54
101	100	FMT		60	59
0	200			65	63
33	250			67	64

STATEMENT LABELS		DEF LINE		REFERENCES	
5	5			51	58
56	10	FMT		53	51
14	20			55	52
60	25	FMT	NC REFS	56	
15	75			59	54
101	100	FMT		60	59
0	200			65	63
33	250			67	64

LOOPS LABEL		INDEX		FROM-TO		LENGTH		PROPERTIES		EXITS	
25	200	0	1	63	55	58		INSTACK			

STATISTICS		PROGRAM LENGTH		520003 CH USED		1268		86	
------------	--	----------------	--	----------------	--	------	--	----	--

04/19/70 20.39.20

FTN 4.6+460

SUBROUTINE MULT 74/74 OPT=1

VARIABLES	SN	TYPE	RELOCATION	REFS
0 A		REAL	F.P.	40
0 COST		REAL	F.P.	40
5 IABC		* INTEGER		41
9 NYEARS		INTEGER	*UNUSED	41
			F.P.	42
				40

STATEMENT LABELS DEF LINE REFERENCES

7 4800 FMT NO REFS 44

STATISTICS
PROGRAM LENGTH 178 15
520008 CM USED

```

1  C/
2  C/ *****ARRAYS*****
3  C/
4  C/ A(50,20) CONTAINS THE DATA TO BE OUTPUT.
5  C/
6  C/ HEADM(50,8) CONTAINS THE HEADINGS FOR EACH ROW OF ARRAY A.
7  C/
8  C/ IZZ(20) CONTAINS THE SPECIFICATION OF THE YEARS.
9  C/
10 C/ *****APRAYS*****
11 C/
12 C/ *****VARIABLES*****
13 C/
14 C/ NYEARS IS THE NUMBER OF YEARS OF INTEREST.
15 C/
16 C/ NROWS IS THE NUMBER OF ROWS IN ARRAY A WHICH CONTAIN COST
17 C/ INFORMATION.
18 C/
19 C/ II IS A FORMAT INDEX. 1=E, 2=F, 3=I.
20 C/
21 C/ IX IS A TABLE HEADING INDEX.
22 C/ 1=BASELINE YEAR DOLLARS.
23 C/ 2=THEN YEAR DOLLARS.
24 C/ 3=.... YEAR DOLLARS. (WHERE .... IS SPECIFIED.)
25 C/
26 C/ IY IS THE VALUE OF THE YEAR INDICATED IN IY=3 ABOVE.
27 C/
28 C/ IZ IS THE FIRST YEAR IN WHICH COSTS ARE INCURRED.
29 C/
30 C/ IA IS A TABLE HEADING INDEX. 1=FISCAL YEARS, 2=CALENDAR YEARS.
31 C/
32 C/ NX=NYEARS + 1
33 C/
34 C/ N=NROWS + 1
35 C/
36 C/ INUM IS THE NUMBER OF THE DEVICE ON WHICH THE OUTPUT IS PRINTED
37 C/
38 C/ IFLAG IS AN INDEX DELINEATING WHETHER THE OUTPUT IS PRINTED OVER
39 C/ THE TERMINAL OR PLACED ON FILE.
40 C/
41 C/ IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
42 C/
43 C/ LA DELINEATES WHETHER THE FIRST COLUMN IS TO BE TITLED "PREVIOUS
44 C/ COSTS".
45 C/
46 C/ *****VARIABLES*****
47 C/
48 C/
49 C/
50 C/ SUBROUTINE FILES(A,ME50M,PRODM,I19)
51 C/
52 C/ THIS ROUTINE ENABLES DATA STORED ON FILES TO BE INPUT TO THE COST,
53 C/ HEADING AND PRODUCTION SCHEDULE ARRAYS DURING PROGRAM OPERATION. ALSO
54 C/ INFORMATION STORED IN THESE ARRAYS CAN BE PLACED ON FILES DURING

```



```

C
C PROGRAM OPERATION.
C
C/
C
60
65
70
75
80
85
90
95
100
105
110

SUBROUTINE FILES(A,HEADW,PRODP,I19)
DIMENSION A(50,20),HEADW(50,8)
INTEGER PRQDH(18,20),IEM(5),SUB
DATA IABC/16/
IF(I19.EQ.2160 TO 22
CONTINUE
*FORMAT(10) ENTER 1 IF YOU WISH TO SPECIFY, BY FILE, THE HEADING,COST
*AND/OR PRODUCTION ARRAYS,*,/,*,* RESPECTIVELY, OTHERWISE ENTER 2,*,*
**A TYPICAL RESPONSE WOULD BE 1,2,1,*)
READ(*,IA,IB,IC
IF(EOF(5))19000,8000
CONTINUE
WRITE(4,*)IA,IB,IC
IF(IA.NE.1)GO TO 201
CONTINUE
*FORMAT(10) SPECIFY THE FILE TO BE READ INTO THE HEADING ARRAY,*)
CALL NANCHK(SUB)
FORMAT(18A10)
CALL RETURN(5MTAPE7)
ERR=0.0
CALL PERFFIL(EP,6MTATCH,5MTAPE7,SUB,2HCY,1)
IF(EP.NE.0.0)GO TO 2
DO 41 I=1,50
READ(7,100) (HEADW(I,J),J=1,8)
FORMAT(18A10)
CONTINUE
CALL RETURN(5MTAPE7)
CALL RETURN(5MTAPE7)
ERR=0.0
CALL PERFFIL(EP,6MTATCH,5MTAPE1,SUB,2HCY,1)
IF(EP.NE.0.0)GO TO 3
READ(1,*)((A(I,J),I=1,50),J=1,20)
CALL RETURN(5MTAPE1)
IF(IC.NE.1)RETURN
CONTINUE
*FORMAT(10) SPECIFY THE FILE TO BE READ INTO THE PRODUCTION ARRAY,*)
CALL NANCHK(SUB)
CALL RETURN(5MTAPE1)
ERR=0.0
CALL PERFFIL(EP,6MTATCH,5MTAPE1,SUB,2HCY,1)
IF(EP.NE.0.0)GO TO 4
READ(1,*)((PRQDH(I,J),I=1,10),J=1,20)
CALL RETURN(5MTAPE1)
RETURN
22 CONTINUE
*FORMAT(10) FOR THE HEADING,COST AND/OR PRODUCTION ARRAYS, RESPECTIVE
*LY,*,/,*,* ENTER 1 TO SAVE ON FILES, OTHERWISE ENTER 2,*,* / ,
**A TYPICAL RESPONSE WOULD BE 1,2,1,*,*)
1004
1000

```

SUBROUTINE FILES 74/74 OPT=1 FTN 4.6+6J 04/13/73 20.35.20 PAGE 3

```

115 READ*,JA,JB,JC
    IF(EOF(5))22,8822
122 CONTINUE
    WRITE(4,*)JA,JB,JC
    IF(JA.NE.1)GO TO 202
120 CONTINUE
1005 FORMAT(* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/,
    +*YOUR HEADING ARRAY,---A UNIQUE FILE NAME.*)
    CALL NAMCHK(SUB)
    CALL RETURN(5HTAPE8)
    CALL REQUEST(5HTAPES,3H*PF)
    DO 141 I=1,50
125 WRITE(3,157) (HEADW(I,J),J=1,8)
157 FORMAT(8A10)
141 CONTINUE
    ENDFILE 3
    ERR=0.0
    CALL PERMFILE(7HCATALOG,5HTAPE8,SUB,2HCY,1)
    IF(ERR.NE.0.0)GO TO 22
    CALL RETURN(5HTAPE8)
135 IF(JB.NE.1)GO TO 302
137 CONTINUE
1006 FORMAT(* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/,
    +*YOUR COST ARRAY,---A UNIQUE FILE NAME.*)
    CALL NAMCHK(SUB)
    CALL RETURN(5HTAPE2)
140 CALL REQUEST(5HTAPE2,3H*PF)
    WRITE(2,*)((A(I,J),I=1,50),J=1,20)
    ENDFILE 2
    ERR=0.0
    CALL PERMFILE(7HCATALOG,5HTAPE2,SUB,2HCY,1)
    IF(ERR.NE.0.0)GO TO 7
    CALL RETURN(5HTAPE2)
150 IF(JC.NE.1)RETURN
152 CONTINUE
1007 FORMAT(* INPUT THE NAME YOU CHOOSE TO GIVE THE FILE*,/,
    +*YOUR PRODUCTION ARRAY,---A UNIQUE FILE NAME.*)
    CALL NAMCHK(SUB)
    CALL RETURN(5HTAPE2)
    CALL REQUEST(5HTAPE2,3H*PF)
    WRITE(2,*)((PRCDM(I,J),I=1,10),J=1,20)
    ENDFILE 2
    ERR=0.0
    CALL PERMFILE(7HCATALOG,5HTAPE2,SUB,2HCY,1)
    IF(ERR.NE.0.0)GO TO 8
160 CALL RETURN(5HTAPE2)
    RETURN
    END

```

SYMBOLIC REFERENCE MAP (P=2)

STATEMENT LABELS

DEF LINE	REFERENCES
74 301	100 90
177 302	148 135
342 1000	FMT NC REFS 69
377 1001	FMT NC REFS 78
421 1002	FMT NC REFS 92
434 1003	FMT NC REFS 102
450 1004	FMT NC REFS 112
504 1005	FMT NC REFS 121
530 1006	FMT NC REFS 137
547 1007	FMT NC REFS 150
0 9000	INACTIVE 74 73
0 8022	INACTIVE 117 116
10 9000	68 73

LOOPS	LAPEL	INDEX	PROP-TO	LENGTH	PROPERTIES
31	41	* I	85 86	208	EXT REFS NOT INNER
34		* J	86 96	118	EXT REFS NOT INNER
126	141	* I	126 129	208	EXT REFS
131		* J	127 127	118	EXT REFS

STATISTICS

PROGRAM LENGTH	7228	466
520008 CH USED		

```

1      C
2      C      SUBROUTINE SPREAD(A,NYEARS,NROWS)
3      C
4      C THIS ROUTINE SPREADS COSTS OVER MULTIPLE YEARS. IN THE MAIN, IT RECEI
5      C THE COSTS DELINEATED IN THE YEAR A PRODUCT IS RECEIVED AND SPREADS THE
6      C COSTS OVER THE TIME PERIOD THEY ACTUALLY OCCURRED.
7      C
8      C/
9      C
10     SUBROUTINE SPREAD(A,NYEARS,NROWS)
11     DIMENSION A(50,20),B(50,30),SPK(50,3)
12     DATA (SPR(I,1),I=1,50) /50*0./
13     DATA (SPR(I,2),I=1,50) /50*2./
14     DATA (SPR(I,3),I=1,50) /50*2./
15     DATA (SPR(I,4),I=1,50) /50*2./
16     DATA (SPR(I,5),I=1,50) /50*4./
17     DATA (SPR(I,6),I=1,50) /50*0./
18     DATA (SPR(I,7),I=1,50) /50*0./
19     DATA (SPR(I,8),I=1,50) /50*0./
20     DATA (SPR(I,9),I=1,50) /50*0./
21     DATA IABC/3/
22     DO 755 I=1,50
23     DO 755 J=1,30
24     755 B(I,J)=0.
25     9000 CONTINUE
26     1000 FORMAT(* IF AN EXPLANATION OF THIS ROUTINE IS REQUIRED ENTER 1, OT
27     *HERWISE ENTER 2*)
28     READ*,IA
29     IF (EOF(5)) 3000,8000
30     CONTINUE
31     WRITE(4,*)IA
32     IF (IA.EQ.55) PRINT 2000
33     IF (IA.NE.1) GO TO 10
34     3001 CONTINUE
35     1001 FORMAT(* COSTS CAN BE SPREAD OVER 9 YEARS. 9 DIGITS ARE USED, E.G
36     *.,.,987.3,/. - THE 1ST NUMBER GIVES THE FRACTION OF THE COST SPRE
37     *AD TO THE 4 TH PREVIOUS YEAR,/,* THE 5 TH NUMBER GIVES THE FRACT
38     *ION OF THE COSTS APPLICABLE TO THE YEAR IN WHICH THE COSTS ARE PRE
39     *SENTLY ALLOCATED, ETC.,/,* IF THE METHOD OF SPREADING AS DISPLAY
40     *ED IN THE ABOVE EXAMPLE IS ACCEPTABLE (FOR EACH ROW) ENTER 1, OTHE
41     *RWISE ENTER 2*)
42     READ*,IB
43     IF (EOF(5)) 3001,8001
44     9001 CONTINUE
45     WRITE(4,*)IB
46     IF (IB.EQ.55) PRINT 2000
47     IF (IB.EQ.1) GO TO 20
48     GO TO 30
49     10 CONTINUE
50     1002 FORMAT(* IF EACH COST IS TO BE SPREAD AS,/, 3F7.3,/,* ENTER 1, OT
51     *HERWISE ENTER 2*)
52     READ*,IC
53     IF (EOF(5)) 10,8010
54     8010 CONTINUE
55     WRITE(4,*)IC

```

```

60      IF(IC.EQ.555)PRINT 2000
        IF(IC.EQ.1)GO TO 20
        30 CONTINUE
        1003 FORMAT(* IF EACH COST IS TO BE IDENTICALLY SPREAD ENTER 1, OTHERWISE
        *SE ENTER 2*)
        READ*,ID
        65      IF(EOF(5)) 30,8030
        8030 CONTINUE
        WRITE(4,*)ID
        IF(ID.EQ.555)PRINT 2000
        2000 FORMAT(* ** HELP IS NOT IN EAGLE3.*)
        IF(ID.EQ.1)GO TO 40
        70      C SPREAD COSTS INDEPENDENTLY.
        C SPREAD COSTS INDEPENDENTLY.
        9002 CONTINUE
        1004 FORMAT(* THE COSTS ARE SPREAD AS DEFINED BY A SET OF 9 NUMBERS, AS
        * DESCRIBED EARLIER.*/,* ENTER THE NUMBER OF SETS OF 9 NUMBERS TO
        * BE USED. THE FIRST SET ENTERED WILL HAVE THE INDEX 1, THE SECOND 2
        *, ETC.*)
        READ*,IE
        8002 CONTINUE
        IF(EOF(5))9002,8002
        WRITE(4,*)IE
        IF(IE.EQ.555)PRINT 2000
        IF(IE.GT.50)GO TO 9002
        DO 110 I=1,IE
        9003 CONTINUE
        1005 FORMAT(* ENTER SET*,I2)
        READ*,(SPR(I,J),J=1,9)
        IF(EOF(5))9003,8003
        8003 CONTINUE
        WRITE(4,*) (SPR(I,J),J=1,9)
        110 CONTINUE
        DO 111 I=1,NROWS
        9004 CONTINUE
        1006 FORMAT(* SPECIFY INDEX FOR ROW*,I3)
        READ*,IF
        IF(EOF(5))9004,8004
        8004 CONTINUE
        WRITE(4,*)IF
        IF(IF.EQ.555)PRINT 2000
        DO 111 J=1,NYEARS
        DO 111 K=1,9
        111      B(I,J,K-1)=B(I,J,K-1)+A(I,J)*SPR(IF,K)
        444      KK=100
        KA=-1
        DO 112 I=1,50
        DO 112 J=1,30
        IF(B(I,J).GT.0..AND.J.GT.KA)KA=J
        112      IF(B(I,J).GT.0..AND.J.LT.KK)KK=J
        NYEARS=KA-KK+1
        CONTINUE
        1010 FORMAT(* THE NUMBER OF YEARS OF INTEREST IS NOW*,I3)
        IK=0
        DO 113 I=K,KA
        IK=IK+1
        DO 113 J=1,NROWS

```


LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES
262	113	J	114 115	29	INSTACK
273		* I	123 123	108	EXT REFS
311		* I	126 126	108	EXT REFS
323	211	* I	127 130	248	NOT INNER
324	211	* J	126 130	203	NOT INNER
335	211	K	129 130	48	INSTACK

STATISTICS

PROGRAM LENGTH 52008 CM USED +5508 2404

74/74 OPT=1

FTN 4.6+460

8-/19/74 26.39.26

PAGE 1

```

1      C/
2      C
3      C
4      C
5      C *****ARRAYS*****
6      C
7      C A(50,20) IS THE ARRAY CONTAINING THE ORIGINAL COST DATA. UPON
8      C RETURN FROM THIS SUBROUTINE IT CONTAINS THE COSTS AFTER
9      C SPREADING.
10     C
11     C B(50,30) IS USED IN CALCULATING THE SPREAD COST DATA.
12     C
13     C SPR(50,9) IS USED TO SPECIFY HOW THE COSTS ARE SPREAD.
14     C IF A COST IS ORIGINALLY SPECIFIED FOR YEAR J THEN THIS ROW
15     C CAN SPREAD THE COSTS OVER THE (J-4)TH TO THE (J+4)TH YEAR.
16     C CPM CAN CONTAIN 50 DIFFERENT SPREADING ARRAYS.
17     C *****ARRAYS*****
18     C *****VARIABLES*****
19     C
20     C IA IS AN INDEX THAT DELINEATES WHETHER AN EXPLANATION OF THIS
21     C ROUTINE WILL BE OUTPUT.
22     C
23     C IB DELINEATES IF THE DEFAULT ARRAY WILL BE ACCEPTED.
24     C
25     C IC HAS THE SAME FUNCTION AS IB.
26     C
27     C ID DELINEATES WHETHER EACH COST IS TO BE IDENTICALLY SPREAD.
28     C
29     C IE IS THE NUMBER OF DIFFERENT WAYS THE COST DATA WILL BE SPREAD
30     C IF DELINEATES THE SPREADING VERSION TO BE USED.
31     C
32     C KY IS USED TO DETERMINE THE FIRST NON-ZERO COST COLUMN
33     C OF ARRAY B AND TO SET THIS COLUMN EQUAL TO THE FIRST COLUMN
34     C IN ARRAY A.
35     C
36     C KA IS USED TO INDEX THE COLUMNS OF THE COST ARRAY. IT IS THE L
37     C NON-ZERO COLUMN NUMBER.
38     C
39     C NYEARS IS THE NUMBER OF YEARS OF INTEREST.-----NOTE. THIS VALUE
40     C MAY CHANGE AS THE RESULT OF SPREADING.
41     C
42     C NPOMS IS THE NUMBER OF DIFFERENT COST ELEMENTS (ROWS) IN
43     C THE COST ARRAY.
44     C
45     C IABC DELINEATES THE ROUTINE FROM WHICH HELP WAS CALLED.
46     C *****VARIABLES*****
47     C *****VARIABLES*****
48     C
49     C
50     C/

```

LOAD MAP - EAGLES
OVERLAY(FLIER,0,0)

CYBER LOADER 1.3-446

34/19/78 26.42.12.

PAGE 1

----- OVERLAY(FLIER,0,0)

FMA OF THE LOAD 111
LWA+1 OF THE LOAD 43321

TRANSFER ADDRESS -- EAGLES 5015

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESS	VER	LEVEL	HARDWARE	COMMENTS
EAGLES	111	14746	LGO	14/19/78	FTN		4.6 464	666X I	PROGRAM OPT=1
CAL1	15057	70	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
CAL3	15147	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL2	15166	114	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL4	15302	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
HARCOCN	15321	100	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL	15421	43	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
ESCALAT	15464	66	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
MEHRA	15552	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CAL5	15571	43	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
PRODUC	15634	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
OUT	15653	56	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ADDL	15741	101	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
DIVIDEL	16042	17	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
ELEMENT	16061	255	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
RINSEY	16336	42	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CUM	16409	17	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
ROHMO	16417	17	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
APRINT	16436	257	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
GCS	16715	260	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
ISL	17175	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
CINSERT	17214	17	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
NAHCHK	17233	126	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
MULT	17361	17	LGO	04/19/78	FTN		4.6 460	665X I	SUBROUTINEOPT=1
FILES	17400	722	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
SPREAD	20322	4550	LGO	04/19/78	FTN		4.6 460	666X I	SUBROUTINEOPT=1
PERMFL	25072	1054	UL-S	04/28/77	COMPASS	3.	2-414		PERMFL FUNCTION SUB-ROUTINE
FETURN	26146	70	UL-S	04/28/77	COMPASS	3.	2-414		FTN-CALLABLE FILE RETURN/UNLOAD
REQUEST	26236	472	UL-S	04/28/77	COMPASS	3.	2-414		FTN-CALLABLE EQUIPMENT REQUEST PROLESSOR
/STP.END/	26730	1							
/FCL.C/	26731	26							
/06.10./	26757	141							
OBNTY=	27120	3	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FOR INITIALIZATION ROUTINE.
COMIC=	27123	64	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON CODED I/O ROUTINES AND CONSTANTS.
DECODE=	27207	73	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORMATTED READ FROM CORE.
ENDFIL=	27302	27	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		WRITE END OF LOGICAL FILE MARK.
FECMSK=	27331	41	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		INITIALIZE CONSTANTS.
FLTOU=	27372	311	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON FLOATING OUTPUT CODE
FORSYS=	27703	611	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORTRAN OBJECT LIBRARY UTILITIES.
INCOM=	30514	302	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		COMMON INPUT FORMATTING CODE
INPC=	31016	174	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		FORMATTED READ FORTRAN RECORD.
KRAKER=	31212	406	SL-FORTRAN	03/06/78	COMPASS	3.	4-446		PROCESS FORMATTED FORTRAN INPUT.

LOAD MAP - EAGLES
OVERLAY(FLIER,0.0)

CYBER LOADER 1.3-4-6

0-19/70 2.0-2.12.

PAGE 2

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSR	VER	LEVEL	HARDWARE	COMMENTS
LDIN=	31620	260	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED INPUT FORMATTING
OUTCCH=	32100	154	SL-FORTAN	03/06/78	COMPASS	3.	4-446		COMMON OUTPUT CODE
ENCODE=	32254	123	SL-FORTAN	03/06/78	COMPASS	3.	4-446		FORMATTED WRITE INTO CCKL
EOF	32377	16	SL-FORTAN	03/06/78	COMPASS	3.	4-446		TEST FOR END OF FILE STATUS
FLIN=	32415	156	SL-FORTAN	03/06/78	COMPASS	3.	4-446		COMMON FLOATING INPUT CONVERTER
FRYAP=	32573	356	SL-FORTAN	03/06/78	COMPASS	3.	4-446		DRACK APLIST AND FORMAT FOR KODE/KRAKER
FORUIL=	33151	45	SL-FORTAN	03/06/78	COMPASS	3.	4-446		FOR MISC UTILITIES
GETFIT=	33217	42	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LOCATE AN FIT GIVEN A FILE NAME
INPF=	33261	203	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED INPUT CONTROL
KODE=	33464	460	SL-FORTAN	03/06/78	COMPASS	3.	4-446		OUTPUT FORMAT INTERPRETER
LDOUT=	34144	241	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED OUTPUT FORMATTING
OUTC=	34405	156	SL-FORTAN	03/06/78	COMPASS	3.	4-446		FORMATTED WRITE FORTRAN RECORD
OUTF=	34563	155	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LIST DIRECTED OUTPUT CONTROL
SPA=	34740	11	SL-FORTAN	03/06/78	COMPASS	3.	4-446		SPA - SUBSTITUTE PARAMETER ADDRESSES
SYSALO=	34751	1	SL-FORTAN	03/06/78	COMPASS	3.	4-446		LINK BETWEEN SYS=AID AND INITIALIZATION CODE
SYS.RH	34752	43	SL-SYSIO	02/15/78	COMPASS	3.	4-446		PROCESS SYSTEM REQUEST
/CON.RH/	35012	5							
CIO.RH	35020	40	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/A08.RH/	35060	10							
MOVE.RH	35070	66	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
MCT.RH	35156	233	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/JHPS.RH/	35411	11							
/MEMC.RH/	35422	3							
/OPES.FO/	35425	1							
/OPEN.FO/	35426	1							
OPEN.RH	35435	7	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/TERM.RH/	35673	1							
/PUT.FC/	35674	7							
PUT.SQ	35703	1477	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
WAR.SQ	37402	303	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/CLSF.FO/	37705	7							
CLSF.RH	37714	22	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/GET.BT/	37736	5							
BTAT.SQ	37743	115	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
WEX.SQ	40960	150	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/SKFL.FO/	40230	7							
SKFL.SQ	40237	51	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
ERR.RH	40310	406	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
CHMR.SQ	40716	7	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OSUB.RH	40725	71	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OPEN.SQ	41016	305	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
OPEN.SQ	41323	14	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/PUT.RT/	41337	11							
RLEO.RH	41350	43	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
CLSF.SQ	41413	136	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/CLSV.FO/	41551	7							
CLSV.SQ	41560	137	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/REN.FC/	41717	7							
REN.SQ	41726	42	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
/GET.FC/	41770	7							
/PAR.XX/	41777	1							
/GET.RT/	42000	11							
GET.SQ	42011	1070	SL-SYSIO	03/03/78	COMPASS	3.	4-446		
Z.SQ	43101	110	SL-SYSIO	03/03/78	COMPASS	3.	4-446		

LOAD MAP - EAGLE3
OVERLAY(FLIER,0.0)

CYBER LOADER 1.3-446

14/19/78 20.42.12.

PAGE 3

FSU.S0 43211 110 SL-SYSIO 03/03/78 COMPASS 3. 4-446

1.205 CP SECONDS 63209 CM STORAGE USED 30 TABLE MOVES

CSA NOS/BE L4540 ECS L4540-CHK1 02/16/73
 20.39.23.Z8ADCPY FROM /AO
 20.39.23.IP 00000192 WORDS - FILE INPUT , DC 44
 20.39.24.ZA6.T25.I0100.CH100000. A750567,KOVACS,
 20.39.24.YYPF,54211
 20.39.27.REMOTE JOB - - NO CARDS WITH THIS DECK P
 20.39.27.UT IN EIN-YM
 20.39.28.ATTACH.GHOST3.
 20.39.28.PFN IS
 20.39.28.GHOST3
 20.39.28.PF CYCLE NO. = 101
 20.39.28.FTN.I=GHOST3,R=2.
 20.40.54.LOCKIN.
 20.42.03. NULL PROGRAM IGNORED AFTER SPREAD
 20.42.03. 4,528 CP SECONDS COMPILATION TIME
 20.42.03.ATTACH.S.NOSLIB.ID=X654321.
 20.42.04.PF CYCLE NO. = 001
 20.42.04.LIBRARY.S.
 20.42.04.REQUEST.FLIER.*PF.
 20.42.05.MAP,PART.
 20.42.05.LCAD.LGO.
 20.42.05.NOGO.
 20.42.12.CATALOG.FLIER.QUICK3.RP=999.
 20.42.12.INITIAL CATALOG
 20.42.12.CY ID= A750567 PFN=QUICK3
 20.42.12.CY CY= 001 00010112 WORDS.
 20.42.12.OP 00010000 WORDS - FILE OUTPUT , DC 40
 20.42.12.WS 4300 WORDS (5*176 MAX USED)
 20.42.12.SCM 6480 WORDS MAXIMUM
 20.42.12.CPA 5,872 SEC. 2,548 ADJ.
 20.42.12.IO 57,701 SEC. 20,867 ADJ.
 20.42.12.CH 1273,680 KMS. 10,191 ADJ.
 20.42.13.CPUS 41.688
 20.42.13.COST \$ 2.49
 20.42.13.PP 89,521 SEC. DATE 04/19/78
 20.42.13.EJ END OF JOB, AD A750567.

***** Z8ADCPY //// END OF LIST ////
 ***** Z8ADCPY //// END OF LIST ////